



College AND UNIVERSITY Business

APRIL 1949: Campus Goes Modern — 24 Pages of Architecture • Four Views on Federal Aid • Accident and Health Insurance • Taking Inventory by Wire Recorder • Food Service Director's Job • Fire Protection Plans



WHO IS TO SUPPORT THE INDEPENDENT COLLEGES?

HENRY FORD II

President, Ford Motor Company

THE AMERICAN PEOPLE BELIEVE IN EDUCATION, and it seems almost certain that higher education will expand and be made available to more young Americans. But it will not be the privately supported institutions that will do the expanding. Independent colleges and universities will find themselves more and more in competition with tax supported institutions that are able to charge less at the *front* door because their deficits are made up out of taxes at the *back* door.

It is of the greatest importance that independent colleges and universities not only survive but also provide the stiffest sort of competition for those institutions that depend on taxes. I am much against an educational system that depends entirely on the state, that is centralized under government control or supervision. I am against it because I don't think it would be good. It would not be worth what we would pay for it.

The existence of a large number of privately supported colleges and universities seems to be the best guarantee that our whole educational system will stay young and dynamic, that there will be no hardening of the educational arteries.

Private institutions of higher education have always been supported in large measure by endowments. The year before last fifty-one representative colleges raised \$65,000,000, but in terms of 1936 purchasing power the \$65,000,000 was worth only \$39,000,000, and in terms of the 1920's, probably not more than \$32,500,000.

Independent colleges have been turning to other sources of income. One is an increase in tuition. But it is obvious that there is a ceiling on this, as eventually many young people who cannot afford the education offered, no matter how good, are automatically eliminated. A significant development has been the appeal to alumni. Alumni contributions to Columbia during 1946-47 represented 3 per cent of all gifts and bequests; to Princeton and Harvard, between 4 and 4½ per cent; to Yale, nearly 16

per cent, and to Dartmouth, more than 31 per cent.

Corporation giving to philanthropy has increased substantially in the last decade, now representing about 8 per cent of the total, a recognition that corporations have a social responsibility and a contribution to make beyond the manufacture of better products at lower costs.

To summarize, the areas that deserve our careful consideration are:

1. Privately endowed and supported colleges must always be ahead of the procession. When they prove unable to fulfill their obligations to society by being vigorous and alert, when they merely do an average job, philanthropy must look around for those institutions that *are* doing a first-rate job and support *them*.

2. The problem of educational costs may need reviewing. Money obtained from tuition, endowments, alumni funds, and other sources must be intelligently spent. We may have become too fancy. We may need more imagination, stimulation and leadership and less ivy.

3. We have a severe personnel problem. Education cannot rise far above the level of its teaching. It is of the greatest importance, therefore, that education compete successfully for the ablest young men and women each year. If independent colleges and universities are going to provide stimulus, imagination and leadership, they will come out of people, not out of stone and mortar.

4. Intelligence apparently is not enough. The development of atomic fission reminds us that the physical scientists can get us into troubles they cannot get us out of. The only real defense seems to lie in character and morality. It may be that the biggest problems of our times will be solved not by scientists but by increased recognition of the importance of moral and spiritual leadership and character. This is a job that rests in part on the colleges and universities that have given us the physical scientists.

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Among the Authors



L. A. DuBridge

LEE ALVIN DUBRIDGE, president of California Institute of Technology, writes on federal financing of education from the standpoint of many years of research on projects sponsored by the federal government. During the war he served as director of the radiation laboratory of M.I.T. under the National Defense Research Committee. Prior to that appointment he was dean of the faculty of arts and sciences at the University of Rochester. He has been president of Cal Tech since 1946.



J. N. Schlegel

JOHN N. SCHLEGEL, treasurer of Lafayette College, first got into institutional administration as business manager of Hill School, Pottstown, Pa. He left that position in 1941 to accept his present appointment. During 1943-45 he served as a consultant on college contracts for the U.S. Army. In addition, he served as county surplus property director for Northampton County, Pennsylvania.



H. N. Hubbs

H. NEWTON HUBBS, treasurer of Hobart and William Smith Colleges, has been a member of the faculty since 1916, except for a brief interlude when he served in World War I as an army artillery officer. Of all things, he specializes in mathematics! One of his special skills is working on algebraic geometry of the Italian school. When not knee-deep in equations, he likes to do a bit of sailing and fishing. He is a talented wood carver, also studies oriental rugs and collects antiques.



G. H. Gill

GLADYS H. GILL, auditor of student funds at Ohio University, has been in accounting work for twenty-four years, the last six in her present position. Prior to that appointment, she was accountant and assistant to the treasurer of Pennsylvania College for Women. She admits she is not "all business" and that she enjoys indulging in her twin hobbies of gardening and cooking.



T. W. Minah

THEODORE W. MINAH, director of dining halls at Duke University, has been active in institutional food service administration for approximately nineteen years. Following graduation from Cornell University's school of hotel administration, he was associated with food service operations of hotels in New England for six years. He left the hotel field to become commissary steward of a steamship calling at South American ports, and for more than three years he was a commissary officer in the navy with the rank of lieutenant commander. Mr. Minah spent five years as food service director for Brown University. At present, he is chairman of the college and university food service section of the National Restaurant Association, which meets May 24 to 27 in Atlantic City, N.J.

FEDERAL AID to education

as viewed by four authorities

"MODIFY IT"—DuBRIDGE

THERE ARE FOUR SOMEWHAT SEPARATE and distinct aspects of the federal aid to education question: (1) federal aid to the public schools; (2) federal aid to the colleges and universities; (3) scholarship aid to able students, and (4) the support of research in science and the social sciences.

Some of the confused statements that one hears about federal aid to education result from a failure to treat these problems separately. Arguments, pro and con, that are applicable to one of these problems may not be applicable to others.

"YES" TO PUBLIC SCHOOLS

Federal aid to public schools is important because we face the following dilemma. Public schools in various communities are supported largely through real estate taxes imposed by the local community. In most communities those taxes cannot be further increased sufficiently to meet the costs of adequate public education. Some other tax base must be sought. Because the federal government can tap a large tax base through the income tax, it is natural to call on it for financial aid. Here, one faces the other horn of the dilemma in that local control and support of public schools is a fundamental tenet of American democracy. Federal aid opens up the channels for federal control, but it is the only method of equalizing educational opportunities throughout the nation.

Federal aid to universities involves a very different set of issues, which have been exhaustively reviewed in the recent report of the President's Commission on Higher Education. The recommendations of this report, however, are based on an assumption worth challenging, namely, that our system

of higher education should be expanded to accommodate in the near future 4,000,000 college and university students. (Our present overcrowded campuses are now accommodating about 2,500,000 students.)

There are two questions I should like to raise to challenge this assumption.

1. Is it really true that nearly 40 per cent of the young people of college age are intellectually qualified for college or university work that meets the standards which the better colleges are trying to maintain? 2. Even if there are this many intellectually qualified students, does our national economy have the jobs to accommodate the 1,000,000 graduates each year who, after four years of college, certainly will not be looking for jobs as truck drivers or ditch diggers? Would it not be better for the colleges and universities to raise their intellectual standards rather than lower them and thus avoid creating millions of frustrated laborers, and at the same time expand the facilities for vocational training through the local public school systems throughout the country? If this were done, the problem of the support of higher education would be a less serious one than the commission indicates.

The problems of higher education and its future support still remain serious. The commission proposed federal aid, but since this would open the way to federal control it proposed that federal aid be restricted to the state universities, which are already under

public control, and not be extended to the private universities.

Although most private universities are not seeking federal subsidies, the problem of financing them is still extremely severe. Although funds for the support of various activities are frequently available from government and industry on a year by year basis, the problem of obtaining buildings and endowment funds from dwindling private fortunes is one of the greatest problems facing higher education. Private institutions are seeking to solve this problem by expanding their methods of fund raising rather than by seeking federal support.

Federal control of our seats of higher learning and research might be disastrous to the progress of knowledge and to advanced thinking. We have seen the disaster happen in two major civilized countries within our own time.

SCHOLARSHIPS ONLY PARTIAL AID

Scholarship aid to individually qualified students presents still a third group of problems. The problems of federal control of education simply do not arise if federal scholarships are given to individual students on a competitive basis. The G.I. scholarship grants have shown that this is a most effective way of accomplishing the desirable result of reducing economic barriers to able students desiring college training. In fact, there seems to be hardly any political objection to a nationwide scholarship fund since it seems to violate none of the traditions or principles of American democracy.

However, there are two problems that arise in connection with such scholarship aids. The first is the cost. Tuition fees constitute a small portion of the costs of going to college. A much larger amount is required for living expenses. The G.I. bill, of course, has subsidized living costs also, but the staggering expenditures that would be involved in paying the living as well as the tuition expenses of one

L. A. DuBRIDGE

President
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or two million students can easily be calculated. I do not believe that any scholarship plan has been seriously discussed that will fully provide for living as well as tuition costs. Hence, it should be emphasized that federal scholarships can lower the economic barriers for able students but cannot remove them entirely.

A still further substantial part of the economic barrier that prevents many students from going to college is their earning power. Their families cannot afford to support them in college and, still more, cannot afford the loss of their earning power for four years. A wide extension of two-year junior colleges and night classes is a possible solution to this problem.

Scholarship grants to individuals are only indirectly and partially an "aid to education." In practically no institutions of higher education do the tuition fees pay more than a fraction of the actual costs of education. At the California Institute of Technology, for example, tuition fees constitute only 28 per cent of the normal income. At other institutions this percentage varies from 25 per cent to occasionally as much as 85 per cent.

Colleges and universities are now crowded with students who are paying their way from various sources, but the colleges are operating on large deficits and are desperately trying to get funds for new buildings or additional endowment. Scholarship funds should not be classed under the head of aid to education in the sense of aiding *institutions* of education; they are in reality only funds to enable individuals to pay the costs of their own education.

"YES" TO SCIENCE BILL

A final proposal that has often been classed under federal aid to education is the proposed National Science Foundation Bill for the support of basic research in the sciences principally at the universities of the country. It is clearly of great importance to the national government, in peace and in war, to strengthen scientific research and to support the education of scientists and engineers. The Science Foundation Bill, if passed, will assist in this direction. Again the foundation will pay the current costs of certain scientific research projects in institutions that already have the permanent staff and the buildings in which to carry on such activities. There has been practically no serious opposition

to the idea of a science foundation, but there has been lengthy discussion as to the way in which it should be established.

The universities have already had experience in the efforts of the federal government to support research in pure and applied science. The Atomic Energy Commission and the National Defense Establishment are spending large sums of money in this way at the present time. From the scientific point of view, the results of this program have been good. These government contracts, however, have brought many a headache to college administrations and have illustrated the difficulties of the federal government in engaging in attempts to support university activities.

"LIMIT IT," advises MOREY

THAT MATERIALLY LARGER FINANCIAL resources are necessary for higher education to perform adequately the gigantic task placed upon it is the conclusion of practically every person who has studied the subject. Many also have concluded that such aid must come primarily from public sources, state and federal.

Many educational leaders and agencies, including the President's Commission on Higher Education, have recommended substantial aid to higher education by the federal government. Present sentiment in the national administration appears highly favorable to a major step in this direction. Some questions concerning methods followed may be in order.

Federal aid in the area of higher education is not new. Beginning with the first Morrill (Land-Grant) Act of 1862, such aid has been provided to all the states for instructional purposes at the college level. Its distribution has been limited to about one or two insti-

Many universities would have to revise entirely and expand greatly their accounting, purchasing, auditing and administrative procedures in order to conform with government regulations. Serious difficulties have been raised with a large number of administrative procedures as well as with salary scales, scholarship and assistantship programs, and other phases of university life.

Also, these research contracts are short-term agreements and since research, by its nature, is long-term, many an important research project is placed on an uncertain year-to-year basis.

In spite of these difficulties, however, a bill to strengthen and to improve scientific research is most desirable and should be promptly enacted.

tutions in each state. In later years, substantial aid to specific activities, chiefly agricultural research and extension, has been granted.

It may be that not all states can provide within their borders sufficient revenue to meet their problems of higher education adequately. If this is true, it means that funds from outside the state, perhaps from the federal government, may be needed to supplement the state's own revenues. The federal government can procure such funds only by revenues received from taxpayers in the various states.

That this procedure is really necessary is not altogether clear. The reports of the Secretary of the Treasury show that only one state now receives from the federal government a sum even remotely approaching the amount paid in federal taxes by its taxpayers. In 1947, total internal revenue collections were \$37,069,521,770. Grants to states for *all* purposes (of which only a moderate part was for education) were but \$1,174,917,749, or only about 3 per cent of collections. Hence, if federal taxes were reduced by the amount of federal aid, and the reductions recaptured by the states, they generally should have the funds they need for services *now* paid for out of

LLOYD MOREY

Comptroller
University of Illinois

federal funds and requiring federal administration and redistribution.

The procedure of the federal government in the past, whenever it makes grants-in-aid for general or specific educational purposes, is to make them to all states in accordance with some standard formula. That means that the state that pays money into the federal government gets back a part of it in the form of aid. From the part that it gets back, however, the cost of federal administration must be deducted. If the state expended this sum in the first instance, instead of turning it in to Washington, both would be ahead.

In addition to the increased cost of administration, the state is limited in its say as to the purpose and the manner in which the money is expended. In every federal grant this decision is made to a greater or lesser extent in Washington. This is not to say that the entire management of grants to educational institutions by Washington has been bad, but there are few such grants that do not carry with them some restriction, limitation, requirement of accounting, or financial procedure that places a handicap on the state and the institution in the freedom of use of the fund and further increases the cost of its administration within the state.

Not only is it clear that *publicly* supported institutions probably are unable to do their jobs adequately without substantial additional aid, which in some states must come from outside the state, but it is also clear that many, if not all, *private* institutions are in a similar situation. The latter cannot procure sufficient income by depending as in the past upon student tuition, income on endowments, and gifts. Hence, it is proposed that public aid be extended to them.

DANGERS CAN BE LESSENER

Dangers in a program of this kind have been pointed out by such persons as Dr. H. W. Haggard, director of Yale Laboratory of Applied Physiology, writing recently in *Yale Alumni Magazine*; Vice Chancellor H. O. Voorhis of New York University in "Let's Stop Leaning on Washington" in *School and Society* (Dec. 4, 1948), and Franklin B. Snyder, former president of Northwestern University, in his 1947-48 report. The major danger emphasized by them lies in the possible restriction of independence of thought and action.

These difficulties can be reduced and funds applied and administered in a

more economical and equitable manner if distribution is made only on the basis of established need in excess of resources and not on a distribution to all states and institutions. Let every state that can afford to do so meet and solve its own problems out of its own resources. Limit federal aid to those states and institutions that require it to bring their programs to a level substantially equal to that of others.

In these ways federal aid will be limited to the places where it is really needed, and useless administrative costs and procedure will be eliminated. Where aid is extended it should be free from dictation as to policy, and administrative procedures should be held to the minimum. Let the government be an interested observer, setting standards, pointing out deficiencies, and ren-

dering aid to remedy those deficiencies only when states clearly establish that they cannot do the job themselves.

We are not unaware of the practical difficulties in getting acceptance of this principle or of making the change in procedure. We are here dealing with present, not past; with principles, not politics. It is admitted that expenditures of federal funds in educational programs in the states generally have yielded good results in the past. This does not necessarily mean that the same practice as in the past should prevail in the future. It does not mean that we should perpetuate the mistakes just because, in spite of them, good results have been accomplished in the past.

Most—if not all—of us would do well, as Dr. Voorhis suggests, to "stop leaning on Washington."

"ON WHAT BASIS?" asks SCHLEGEL

THE EDUCATIONAL OPPORTUNITIES grasped by many veterans following the war established a pattern of desire for education that should be continued with the federal scholarship plan. The progress made in consideration of federal scholarships suggests that now is the time to provoke discussion regarding the basis for the award if the legislation is enacted.

In the January issue of *COLLEGE AND UNIVERSITY BUSINESS* (p. 37) Dr. Ralph McDonald, executive secretary of the N.E.A., outlined seven excellent points as a basis for the legislation. To these points should be added the principle of "need."

One point of view is that colleges should unite in support of the principle that federal funds should not be used except for those qualified students who would be unable to attend an accredited college without scholarship aid.

This subject of "need" has been opposed by some in the educational field

who feel that determination of need is difficult at the college level and will be impossible at the state or federal level. It is their considered judgment that it will lead to another government bureau with controls-records, which means administrative expense amounting to appreciable sums that would better go to scholarship use.

Here is a principle of procedure that should be thoroughly reviewed. We should not lose sight of possible negative public reaction to awards to those able to pay for their education. Time and disappointment could develop considerable opposition to such awards and might hurt—if not destroy—the federal scholarship plan.

Consideration of administration processes should include not only scholastic standards, but also screening of applicants, payments and method, student controls, state allotments, and state and college responsibilities. Preliminary attention to these factors will minimize subsequent adjustments and need for corrective regulations that evolved in the war training contracts and the V.A. contracts.

To the several national and/or regional educational groups should be committed the responsibility of estab-

JOHN N. SCHLEGEL

Treasurer, Lafayette College
Easton, Pa.

lishing tests and minimum college or precollege scholastic attainment for candidates for these scholarships.

Because there are many veterans and others now in college who have "need" for scholarship assistance, and also have creditable scholastic records, some provision should be made to have them participate in the federal scholarship plan. Scholastic standards should be established to determine their eligibility.

The next step in further screening of the scholastically eligible would be determination of need (if need is to be one of the qualifications). Each college should be the medium through which an applicant files his application for scholarship. Candidates for federal scholarships should be approved by the college scholarship committee and their names forwarded to the state committee made up of personnel elected annually by the Association of College Presidents of each state. This committee should have power to award partial scholarships if qualified applicants exceed available funds.

Recommendations of the state committee (in multiple copy) would be

forwarded to the federal body created to disburse funds directly to institutions, as per authorization from state committees. The government agency would forward one copy of approval to the institutions and one copy to the recipient of the scholarship.

Assuming that a candidate has received an award, we now face his status as a student. The college should retain its present prerogative of accepting and rejecting, of probating and dismissing applicants and students. In the act or in the regulations which the act may permit should be a definite and clear statement that the college shall regulate its student affairs without interference or without loss of participation under the act when there is a disagreement regarding its decisions.

The important factor in the administration of this aid is not whether a college shall or shall not accept a student, but whether the administration of the act shall be unfair to an applicant.

The college must be able to dismiss students with wrong standards of conduct; students should lose scholarships

if they do not maintain a good standard of scholarship; those in good standing should have the privilege of transferring to another college; those dismissed for conduct or scholastic reasons should be denied further aid.

In advance, a policy should be determined regarding refunds in case of illness, illness limits, and refunds in case of dismissal.

It would not be amiss to require any student receiving aid to repay the amount of federal scholarships extended to him for any term or semester during which he was dismissed for disciplinary reasons. This could be accomplished by a statement to that effect in the application for aid.

It would not be amiss to consider in connection with the federal scholarship plan a plan for federal scholarship loans for students who are only temporarily embarrassed because of extenuating family circumstances. Repayment of such loans could start within sixty days of termination of a student's connection with a college or university.

Distribution of funds to states should be based on the ratio of the total number of students attending college in that state to the total number in the whole country. Such a basis will relate the funds to the college population which, basically, determines the percentage of students in need of scholarship aid.

Payments to institutions should be made upon authorization established by state committee recommendations and should be made through the Federal Security Agency within thirty days. They should be made on a semester or term basis.

NOW IS THE TIME

Thinking on the subject by other college administrators has produced ideas such as (1) scholarships should be for tuition at the chosen college *plus* room and board; (2) scholarships should not be for a fixed sum of money; (3) administration of tests should be handled by states, rather than by regional groups.

These proposals and ideas are to promote discussion and evolve a procedure that commits a minimum of administrative responsibility to federal agencies.

Now is the "accepted time" to review details that will assure the maximum benefits from appropriations for federal scholarships and minimize negative reactions to the plan.

"TRY BUSINESS FIRST," says HEALD

BOILED DOWN TO ITS ESSENTIALS, the ultimate recommendation of the President's Commission on Higher Education simply urged greater support of education by the federal government.

Such solution is fraught with danger to the continued conduct of higher education in an atmosphere of freedom. Federal support means federal control; historically, such control is perhaps minute in the beginning, but it usually is rapidly broadened and seldom, if ever, totally relinquished.

Without private support, higher education in the United States will be subjected to the same dangers of regimentation that business fears and is so frantically trying to prevent.

Corporations today are spending literally millions of dollars to demonstrate that they are operating in the public interest.

If American business can justify to itself and to its owners expenditures

to explain, defend and promote the democratic economy in which it operates and prospers; if as a good citizen it legitimately can assume certain charitable responsibilities, why should it not go a step farther and logically lend its financial support to privately endowed higher education?

When federal support remains as the only bulwark of higher education, American business inevitably will suffer. It will have none but its collective self to blame if the country's system of higher education is permitted to flounder and collapse in the mire of politically dominated state control.

When this happens, the American free enterprise system, too, will collapse.

HENRY T. HEALD

President, Illinois Institute
of Technology

When it comes to

ACCIDENT OR ILLNESS

our students are completely covered

H. NEWTON HUBBS

Treasurer, Hobart and William Smith Colleges
Geneva, N.Y.

THE GENERAL HEALTH OF THE STUDENT body is an important factor in the successful administration of every college and university. The swollen enrollment of practically every institution of higher learning in the land and the crowded conditions that have been forced upon most of them because of lack of available housing and classroom space have magnified the problem of providing for and safeguarding the health of students.

For many years, Hobart and William Smith Colleges in Geneva, N.Y., have maintained separate infirmaries for men and women, each staffed with full-time registered nurses. Each college has had its own physician who has regular office hours at the infirmaries. In addition, the colleges made available to the students on a purely voluntary basis an accident insurance policy.

In 1947, because of the increase in students at both colleges (an enrollment more than double the prewar student body) and the satisfactory operation of the voluntary accident insurance, the infirmary service of the colleges was enlarged and expanded.

Under the new plan all of the past infirmary services were offered, and a complete student health and accident insurance program was adopted. The new program was included in the health and infirmary fee of \$13 per term charged by the colleges.

Under the provisions of this program, the student receives infirmary care, regular nursing service at one of the two infirmaries, ordinary medicines, and the services of the college physician. Students requiring hospital care are sent home or to the local hospital, which is equipped with complete facilities for surgical and medical conditions.

This program enables Hobart and William Smith Colleges to employ any of the services for which benefit is

provided whenever needed on account of injury or illness, without the necessity of extra bills to parents or students. The charge of \$13 per semester covers the period beginning with opening day in the fall and continuing through the closing day in June. An additional charge of \$6.50 is made for the eight-week summer session. For students not attending the summer session but who wish to continue the insurance protection during the summer months, supplementary coverage is offered at a low rate.

NO LIMIT TO ILLNESSES

The benefits under this plan are paid irrespective of any other insurance to which a student may be entitled through a personal policy or membership in an association. When, on account of an accident or illness, a student at Hobart and William Smith Colleges requires medical services not provided by the health department of the colleges, the actual cost of such service is paid by the insurance company for each accident or illness, subject to certain provisions. There is no limit to the number of separate accidents or illnesses during the policy term for which reimbursement will be made.

Hospitalization is paid at the rate of \$6.50 per day beginning with the first day for which a student is charged. In addition, reimbursement for additional hospital services is made within the limits of \$32.50 for x-ray examinations, laboratory tests, anesthesia, use of operating room, special medicines, and surgical appliances. When the service of an ambulance is required, the policy pays \$7.50.

Surgical benefits are in accordance with a graduated schedule ranging up to a maximum of \$225, and a copy of this schedule is on file at either infirmary. If a consultant is called by

either of the college physicians to aid in diagnosis or treatment, a reimbursement of \$25 is paid. A maximum of \$100 is allowed on the basis of \$8 per eight-hour day for the employment of a private registered professional nurse. In the event of accidental injury to sound, natural teeth, the policy pays up to \$100. The aggregate limit for all benefits combined for each disability is \$500.

No reimbursement is made for other dental treatment, or for eyeglasses or prescriptions for them. Disability due to war or air travel, except as a passenger on a regularly scheduled flight of a properly licensed air transport company, is not allowed. Nor is any allowance made for a disability which is covered by a workmen's compensation act of law.

Excluded also are services of family physicians (other than for surgery) while students are at home during vacations.

All medical or hospital bills are submitted directly to the proper college authorities, and the colleges submit them in proper form to the insurance company. The insurance reimbursement is sent to the colleges.

One of the interesting sidelights of our experience with this plan is that we have found that appendectomies seem to come in series. In 1947 we had three men and one woman student undergoing such operations within ten days of each other. Again in 1948 we had two men and one woman student down with appendicitis at about the same intervals.

It is also interesting to note that the net cost to one woman student last year of an appendectomy was just \$22.50 because of our insurance program. Insurance also paid the cost of two operations, \$431 in all, for a football player. The insurance program has resulted in a considerable saving in our athletic association budget.

Our students, also, place a real value on the policy. Before leaving for summer vacation last year, 156 of them applied for the supplementary coverage for the summer months, offered them at a low rate.

Our experience with this student health and accident insurance program to date has proved most successful, from the point of view of both the colleges and the students. We know that our students, now numbering more than 1200, are well cared for by this combination of infirmary service and insurance.

Supervision of STUDENT ACTIVITY FUNDS

GLADYS H. GILL
Auditor of Student Funds
Ohio University

THE STUDENTS' GENERAL FUND AUDIT system has been in use at Ohio University for twelve years and has been devised to include all extracurricular activities. This means all organizations, groups, enterprises or any activity of an extracurricular nature. Social fraternities and sororities have the privilege of optional participation; I feel that it should be compulsory for social fraternities, since the national offices do not maintain a uniform check on these organizations.

The purpose of the system is to provide accountability of funds, to obtain uniformity in accounting records, to establish continuity between business officers and their successors, to afford systematic methods for transactions, and to assist the organizations in keeping their activities on a sound business basis.

Participants in the fund are referred to as members. Each member is re-

quired to have a faculty adviser, who is approved by the campus affairs committee. It is the express duty of the advisers to give advice and counsel to members, particularly advice concerning their financial condition and financial planning. Advisers are required (1) to assist in preparing and to approve the budget and any necessary revisions thereof; (2) to sign all checks of respective members, and (3) to see that the budget is not exceeded.

Based on the plan of a central fund for all members, a bursar, who is directly in charge of the fund, is provided. Members deposit their funds in the central fund and make their disbursements or withdrawals in much the manner that they would do business with a public bank.

The following standard forms are provided by the fund office: deposit slips, vouchers, checks, receipt books, and cash books. They are printed with

the heading "Ohio University Students' General Fund" and have a blank space for inserting the organization's name.

Receipt books are made up in pads of fifty duplicate receipts. The cash book provides for the recording of all cash receipts, of deposits in the students' general fund, and of checks issued (disbursements). Ample space is allowed for classifying the receipts and disbursements. The use of any other satisfactory cash record is permitted when necessary. With some of the activities it is necessary to use an accounts receivable ledger, general ledger, and journal. Fraternities are permitted to use the forms supplied by their national offices.

The procedure that we have outlined for the treasurers is as follows:

"1. When any money is received, write a receipt in duplicate, state on it what the money is for, and retain the duplicate in the receipt book. These receipts are numbered consecutively, and the treasurer is responsible for each one in the book assigned to him. Deposit daily in the students' general fund office. Make deposit slips in duplicate and enter deposits in cash book. One copy of the deposit slip is signed and returned to the member and the other is retained by the bursar's office.

"2. Make all disbursements by check, preparing a disbursement voucher in duplicate for each check. State on the voucher what the check is for and enter the disbursement in the cash book. Attach the bill, statement or invoice that you are paying to your copy of the voucher. Submit the check and both copies of the voucher to your adviser for signature and then take them to the bursar's office. The bursar will number them and countersign the check and return your copy of the voucher and check to you for delivery to the payee.

"3. If you frequently have many small items of expense in amounts less than \$1, it may be advisable to

[illegible]

A student treasurer must make all disbursements by check, preparing a disbursement voucher in duplicate for each check. The voucher must state what the check is for. The bill or statement is attached to the student treasurer's copy of the voucher. The faculty adviser signs both copies of the voucher and the student takes them to the bursar, who numbers them, countersigns the check, and returns one copy of the voucher and the check for delivery to the payee.

use a petty cash fund. You may do this by obtaining the approval of your faculty adviser and the auditor and by complying with the auditor's requirements of accounting for a petty cash fund.

"4. Tickets for all events to which admission is charged must be printed, must be numbered by the printers, and must be delivered by the printer to the bursar's office. The bursar will check the tickets and issue them to the person designated to be in charge of the event. This person will be responsible for the tickets or the money for them at the admission price and will be required to file a report of ticket sales with the bursar immediately after the event. Standard forms for ticket sales reports are supplied by the bursar. Guest lists must have the written approval of the adviser and must be submitted to the bursar in advance of the date of the event. A doorman, provided for each occasion, is responsible for checking admissions and retaining tickets and stubs. After all ticket reports and guest admissions are checked by the auditor, the member writes the check for the federal admissions tax and leaves it with the auditor,

Students' General Fund OHIO UNIVERSITY	
Deposited by _____	
Organization _____	
Athens, Ohio _____ 19____	
— PLEASE LIST EACH CHECK SEPARATELY —	
CHECK NO.	
DATE	
CHECK	
Source of Funds Deposited:	
Receipts from ticket sales;	\$ _____
Date or Event _____	
Donations _____	\$ _____
Other Receipts _____	\$ _____
TOTAL DEPOSIT \$ _____	
Signed _____	
Treasurer of the Organization	
— All Checks Credited Subject to Final Payment —	
Bursar	

Student deposit slip.

who files an admissions tax report under the name 'Students' General Fund.' Records are kept of all tax

OHIO UNIVERSITY

Athens, Ohio _____ 19____

STUDENTS' GENERAL FUND

Report on Sale of Tickets received from Bursar:

Member's name _____

Event _____

Date and Place _____

Total quantity of tickets received:

Numbers from _____ to _____ inclusive

Tickets accounted for:

Free Tickets given (approval and signature list attached) _____

Tickets returned herewith: (Unused)

Numbers from _____ to _____ inclusive

Numbers from _____ to _____ inclusive

Numbers from _____ to _____ inclusive

Numbers from _____ to _____ inclusive

Numbers from _____ to _____ inclusive

Numbers from _____ to _____ inclusive

Numbers from _____ to _____ inclusive

Numbers from _____ to _____ inclusive

Deposits Applying on this Report: Total to be remitted for at Sale Price _____

Date _____ \$ _____ Total amount remitted at \$ _____ each \$ _____

Date _____ \$ _____ Signed _____

Date _____ \$ _____ Title _____

Total \$ _____

The bursar supplies a standard form for ticket sales reports.

transactions until checked by tax authorities.

"5. You will be required to present your records for audit at any time specified by the auditor. They should be completed, up to date, and in good order, and accompanied by a statement of receipts and disbursements.

"6. The bursar is to be notified immediately of any change of treasurers or faculty advisers. If a treasurer resigns or leaves school, his records should be turned into the auditor's office for audit before the new treasurer takes over."

The students' general fund is supported by a small audit fee charged each organization; the remainder of the cost is borne by the university. The audit fee is based on a percentage of gross income, namely, 1 per cent of all gross receipts of \$100 and more, and a charge of \$1 on accounts less than \$100. There is a maximum charge of \$100 for social fraternities.

A few of our organizations are large enough that the treasurer handles thousands of dollars a year. We feel that he has a good opportunity to get experience in keeping a set of records, entering into contracts, making purchases, and planning financial programs. It isn't easy to convince the treasurers of some of the smaller organizations that it is necessary to keep a set of records. We require a minimum of six semester hours of credit in accounting for business managers

of all student publications. These managers are appointed by the campus affairs committee, while the treasurers of the smaller organizations are elected by their members.

The bursar keeps a ledger account for all members. Deposits and withdrawals are posted daily, the same as any bank account. A duplicate file of deposit slips and disbursement vouchers is kept in the bursar's office. Money received in the bursar's office is deposited in the city bank. Canceled checks are kept in file in the bursar's office.

When there is a large accumulated balance in the banks that is not needed for current use, the money is invested, with the approval of the treasurer of the university, and the interest on such investments is used to help defray the expenses of the fund. This money must be invested in something that can be converted into cash quickly, usually government bonds.

At the close of each college year all accounts are audited, and an annual report is published showing receipts, disbursements and balances in their respective accounts. The accounts of the social fraternities are not published as their affairs are confidential transactions with the fund.

A new college year brings on new officers but, with a definite audit system, there is no confusion in starting a new year. We feel it is a service valuable to university and to students.

Chicago bookstore's use of wire recorder in

TAKING INVENTORY *proves accurate and inexpensive*



A portable microphone strapped to a man's shoulder is connected by a cord to the wire recorder machine. By the flick of a button, the machine plays back the recording (like a record player) or the data can be withdrawn quietly through the use of earphones.

IN JUNE OF 1947 THE UNIVERSITY of Chicago bookstore took its annual inventory with the aid of wire recording machines for the first time. It was so successful in producing an accurate and inexpensive inventory that in 1948 this method again was employed.

Taking an inventory by this means consists mainly of calling the needed data into a portable microphone strapped to a man's shoulder. The

microphone is connected by a long, heavy wire cord to the wire recorder machine which picks up the words on a fine wire being wound onto a spool.

At any time during the recording or after, by the flick of a button, the machine will play back—like a record player—all the data that have been recorded. The data also can be withdrawn quietly through the use of earphones and foot pedals, much in the

D. S. PASSMORE

Manager, University Bookstore
University of Chicago

manner of transcribing from dictaphone records.

It is possible for key punch operators to listen to reels being played back and to punch tabulating cards for later calculation by tabulating machines, and for a typist to type the figures for calculation by other calculating machines. Some firms have clerks draw off the data on large spread sheets specially adapted to their business and to their figure requirements for inventory control.

SAVING THROUGH SPEED

This method of taking an inventory is particularly adaptable to stocks consisting of a wide range of items or units in fairly small quantities. The saving comes through the speed with which the data needed are recorded. A man can count five, ten, fifteen or even fifty books quickly, for instance, and call the counts into the machine and go on to the next item. If, however, he had to count several hundred or even thousands of a particular title, the microphone and machine would be idle too great a proportion of the time.

The operation of the machine itself is simple enough for anyone with a clear voice and good diction to do the calling into the microphone. When we first investigated the possibility of adapting the procedure to our store we planned to rent the machines and have our own people operate them. We learned, however, that there are firms that have inventory experts who are used to talking steadily into a microphone for eight hours a day, day after day. They also are familiar with all the little pitfalls that develop into "morning after inventory" headaches. They know enough to keep the unit of count and the unit of cost always comparable. A count of 3000

at \$2 per thousand is called into the microphone as a unit of 3 at \$2. An amateur might say the count is 3000 at \$2 which would be extended as \$6000 instead of \$6. We actually experienced such errors in our previous method of taking inventory with the aid of part-time students.

We engaged the services of a crew of ten such experts who spent two days calling off the data on 25,000 items. They used seventy-five reels and since each reel holds 2 miles of wire, there were 150 miles of wire needed to record these 25,000 items. That would have been a lot of talking for our own people to do.

Our people performed a greater service, we believe, by being at the beck and call of the experts and doing a great many things to help them get the data called quickly and correctly into the machines. Their preliminary planning helped to take full advantage of the talking time of the inventory men. It is important to get as many words on a spool as possible. Fewer spools are then required, and the later transcription is made easier.

SOME ITEMS PRECOUNTED

All of our merchandise is supposed to be marked with the cost, selling price, and date of purchase. Careful checks were made to see that this had been done and that broken packages were marked clearly. In some cases, where counting would be slow or difficult, the items were precounted for the men. This could be done with several reserve stock items. Modern library books consisting of many different titles, but purchased at the same price, were grouped as one count, regardless of title. Penguin books and pocket books were handled the same way. Art prints were grouped in price ranges. In the textbook department there were instances where three or four copies of a title showed in front on a shelf, but three or four more were back of them. Slips were inserted with counts on them so it was unnecessary to look back of each book to see what was there.

A floor plan of the store was laid out to show the section numbers for each department. These numbers compared to those actually written above every section in the store. A section, in most instances, consisted of a 3 foot section of shelving, a table, a counter, or a showcase, but it might be just a spot on the stock room floor where merchandise might be stored.

Our inventory supervisor followed the men around and checked off each section as it was called. Each department manager had a list of his section numbers, too. This acted as a double check that every item in the store was actually counted.

For some years previous to 1947, we had recorded our inventory data on tabulating cards, the faces of which were divided into two sections. The left-hand portion contained a number of specifically labeled spaces which were to be filled in by hand with such facts as: (1) department number; (2) section number; (3) shelf or drawer number; (4) short description of the items; (5) year of purchase; (6) cost in dollars and unit; (7) selling price for the same unit, and (8) number of units.

In order to save time on inventory day—when the store was closed for the count—we hired a great many extra people to come in a couple weeks ahead of time and write in on the cards everything except the actual count. We assumed, and this assumption was not always correct, that the same merchandise would be in the same location, only changed in count on inventory day.

On inventory day the counts would be inserted and the cards sent to the tabulating department. Key punch operators punched the right-hand portion of the card with the information written in the left-hand portion. The punched cards were then processed through the various sorters and calculators to produce the dollar value by department, by year of purchase, and so forth.

Injecting the wire recorder into our procedure involved putting on wire spools information previously written in long hand in the left-hand portion of the inventory card. These reels were then turned over to the tabulating department, and the key punch operators punched cards with the data they listened to instead of reading as they had done by the old method.

Since we planned in advance to have key punch operators record the data on tabulating cards and since the speed of such operators may be increased greatly by the element of rhythm, we asked each of the inventory callers always to call the data in the same way and in the same order.

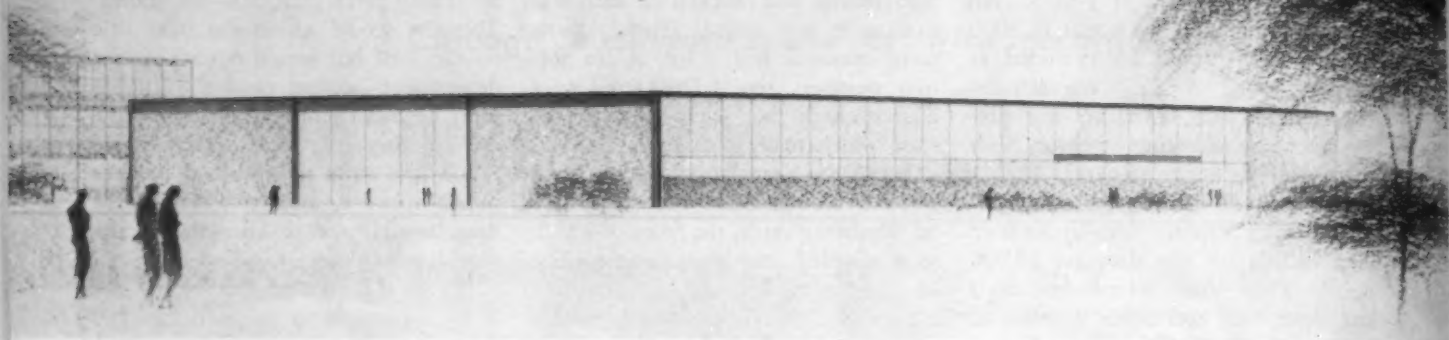
The man in the general book department, for instance, would start out saying: "This is department 41, starting section 152, shelf 1, Abbott: Child

and State, 46 is the year, \$4 cost each, \$5 selling price each, 10—the count." Then he would go to the next title on the shelf but would not repeat the department, section or shelf number until he had changed to another. The men in the other departments would follow the same routine, and the key punch operator, when transcribing the data, would always know what she would punch next.

One of the most satisfactory features of taking inventory by this method is the ease with which it can be audited. Our university auditors and our outside auditors traveled from machine to machine listening to the men as they called the counts. While a man called ten books into the machine, the auditor could look up at the shelf and see them there. Often while the callers were on a rest period, by means of earphones the auditors could listen back and make further direct spot checks from the shelves. The reason for calling both cost and selling price was to catch any discrepancy wider than the normal discount. A book incorrectly showing a cost of \$1.50 and selling for \$5 would be questioned because such a discount is not possible. Both the auditors and inventory men stopped such errors on the spot.

PROFIT FROM EXPERIENCE

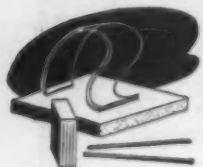
Studies of our first year's experiment, with a view to making improvements, revealed the fact that we could get all the information our auditors needed without talking so much. That could be done by boiling down the description of the items. On books, for instance, we decided not to call author and title. It is obvious that a great deal of time could be saved by not calling a title like the *Biology of Schizophrenia*, which had to be studied to be pronounced and had to be listened to by the key punch operator before she came to the figures she was to punch. We used titles the first year thinking it might be necessary to check back in case of error. If the checkback is made quickly enough, the location plus the costs and selling prices would serve satisfactorily for such identification as was found to be needed. As a result of this, and of further impressing the inventory men with the importance of turning the microphone off when not actually being talked into, the job was done the second year with fifty reels instead of seventy-five, although the inventory was slightly larger.



CAMPUS DESIGN



NEW MATERIALS



SCIENCE BUILDING



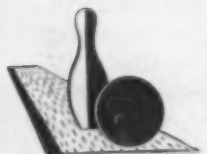
CLASSROOM BUILDING



LIBRARY



STUDENT CLUB



FINE ARTS BUILDING



RESIDENCE HALL FURNITURE



CAMPUS DESIGN

An interview with LUDWIG MIES VAN DER ROHE

by MILDRED E. WHITCOMB

IN TEN YEARS YOU MAY NOT RECOGNIZE your own campus from its 1949 photographs. Barring hurricane or epidemic, the ancient elms will still stand watch with all their supple charm, but the buildings—the buildings will look like nothing Grecian, nothing Gothic, nothing Georgian, nothing Gee-Gawgian. The buildings will be new and simple, direct and honest. The buildings will be modern.

By 1960 the college campus will have gone modern because modern architecture: (1) is cheaper to buy; (2) is cheaper to keep up; (3) can be cut to the pattern of today's educational cloth; (4) can be inexpensively altered as curricular styles change, and (5) is more appropriate and beautiful in that it expresses our age both practically and esthetically.

The foregoing pronouncements are a free translation from some writings set down not on tablets of stone, but in steel, brick and glass. The architect who is using tons of steel, brick and glass to compose the first large totally modern campus is conversationally reticent. Words come sparingly from him, but in the language of architecture he has amazing fluency, and in this form of expression his ideas pour forth pure, controlled, concise and with restrained eloquence.

This man is designing a hundred acre metropolitan campus in the modern idiom; this means, briefly, that

he avoids a preconceived idea of what a building is going to look like; instead, he works out its appearance simultaneously with its need, taking nothing for granted from the architectural styles of the past. Five buildings of steel, brick and glass have already risen on this enlarged campus being reclaimed from Chicago's South Side slums.

When President Heald of the Illinois Institute of Technology commissioned the director of his architecture department, Ludwig Mies van der Rohe, to design the new campus, Mr. van der Rohe, one of the several great German-American architects, and his staff made a survey of the needs of each department. Results show that most of them had the same general requirements: classrooms, laboratories, drafting rooms, shops, lecture rooms.

The professor of architecture next determined the optimum size of classroom and laboratory, arriving at a module of 24 feet. He then drew a 24 by 24 foot net across the campus plot, and in this net he designed clusters of single buildings.

Whether to erect one enormous structure (or perhaps two very large buildings) or to decentralize was a problem given initial study. The decision to decentralize was based on three points: (1) each smaller building could be more accurately tailored to its special needs; (2) to acquire successive sums of \$600,000 or \$800,-



Mies van der Rohe, one of the great figures in modern architecture.

000 for smaller buildings would be simpler and quicker than to accumulate several millions for a college Pentagon Building; (3) the esthetic possibilities would be greater, owing to a nice use of courts, walks and landscaping features.

Even had the centralized plan been adopted, the skyscraper treatment was taboo. Mr. van der Rohe considers the skyscraper an inappropriate expression of the educational enterprise.

On a campus not strictly metropolitan, but located in a rolling, tree shaded park, suburb or countryside, Mr. van der Rohe would have evolved a less symmetrical plan, taking his cue from the natural contours.

In the Illinois Tech plan, the architectural personality of the buildings is derived from the nature of the curriculum. Emphasis on science and technology seems to call for directness and sincerity of expression. With two larger structures, the administration building and the union, another characteristic is achieved, that of dignity.

The 24 foot square classroom is the basic unit of the enlarged Illinois Tech campus. The laboratory is one and one-half or two 24 foot modules in length and one, two or four modules in width. Shops may be two or three bays wide and as long as needed. Office space consists of the basic classroom unit divided by two.

This inherent flexibility means much to an institution with a prewar enrollment of 2500 and a present enrollment of 7000. If necessary, it can expand farther; with equal ease it can be converted as space requirements change and as technology swings forward with giant strides.

One principal characteristic of modern architecture is the skeleton sys-

tem. Nearly all of our larger buildings are skeleton buildings. Windows and walls merely fill in the space between the steel framing members. Use of the steel form allows great expanses of glass; brick walls need be only curtain walls.

Mies van der Rohe's buildings at Illinois Tech and elsewhere differ from many others in the modern system in that the skeleton is exposed. As in all true Modern, the essential elements are expressed; nothing is formalistic; all is honest and forthright. Ornament and all else that fails to make sense are eliminated.

"You maintain that modern architecture costs less. How is that?" Mr. van der Rohe was asked.

"The module system, being repetitive, reduces construction costs. The simplicity of a modern building is another savings factor; all decorative solutions are usually more expensive.

"The exposed skeleton and the non-loadbearing walls are economies. At Illinois Tech, we use large expanses of glass, but it is not double or triple glass. We feel that this extra expense is unnecessary. We bring the steel mullions inside and outside in one piece—that brings down cost.

"Our buildings are strictly fireproof, and this is reflected in the insurance rates.

"More important, our buildings fit the educational program. The greatest

efficiency in education is the greatest economy. We don't even need to measure the cost in dollars. If a building serves the program of today and is flexible enough to serve tomorrow's program too, it is really economical."

As to maintenance, Spartan simplicity in planning and wise selection and frank use of materials make for ease and economy, Mr. van der Rohe asserts.

"For example, we had planned to use brick for interior walls, but we switched to plaster because it was cheaper. That was false economy. A student drapes his lanky figure against the wall like this [Mr. van der Rohe puts his hands behind him, rests his head, back and palms against the plaster and plants the sole of one brown shoe just above the baseboard]; in the end it would have been cheaper to use a brick wall that would wash."

"Do you favor radiant heating for a college building?" the former Bauhaus director was asked.

"Certainly not for laboratories," he came back instantly. "There it is dangerous practice. You never know at what moment the laboratory director may demand a hole in floor or ceiling to accommodate something promising in new equipment. With radiant heating coils in floor or ceiling, his hands and your hands are tied."

"Why do so many universities that have schools or departments of archi-



Two buildings on the new Illinois Tech campus. Mr. van der Rohe's designs are known for structural purity and subtle spatial relationships.



Illinois Tech architecture is both radical and conservative: in its concern with meaning and in its use of the eternal laws of architecture: order, space and proportion. radical in its use of science and technology, conservative





On this and the opposite page are views of the chemistry, chemical engineering and metallurgy, and the alumni memorial buildings. The sketch on page 12 is of the administration building, a structure not yet built but already the center of architectural discussion in many countries.

ecture step outside the walls for a campus designer, Mr. van der Rohe?"

"Some of it is rejection of the new, provided the school is attempting to interpret our own times. The trustees personally may resent the new architecture just as the first Gothic buildings must have been viewed as intruders in the Romanesque surroundings. Too, the trustees know they will have to defend their choice of Modern against attack from powerful segments of the alumni although it has actually come to pass here and there within the last year that approval of traditional campus designs is requiring the stronger defense by boards and building committees.

"A more logical basis for opposition is that some architectural schools or departments do not maintain an architectural office. They are not set up as practicing professionals. All our schools need better staff men."

"Suppose an architect is commissioned to design one building on a traditional campus. Should he make it wholly modern, or should it be transitional in an effort to tie it in with the older style or styles?"

"If the architect is not well schooled in the new idiom, he may turn out not a truly modern design but a 'modernistic' design," the master planner explained. "In that case almost anyone immediately will feel the contrast between the old and new. 'Modernistic' is a kind of formalism—what is normally called 'style.' You can't build a campus in the manner of the fashion. The first building will be outmoded before the last is finished.

"However, if the new building on the old campus is modern in the true and accepted sense, it will fit in with older buildings. In the design it becomes chiefly a matter of scale. If the scale is correct in relation to adjacent

structures, the result will be a harmony.

"These days the better schools are turning out many fine fledglings in modern architecture, and to give them practical experience there exists a limited but growing number of architectural firms capable of sound modern design and construction. To these firms or to pioneer consultants more and more colleges will turn for an apt expression of their educational ideas and ideals through campus architecture."

There is an unconscious compatibility between modern architecture and the goal of education, Mr. van der Rohe concludes. A college can't teach its students experience—they must get that on the job. A college exists to teach the fundamental principles only.

If students are surrounded by a building or by a group of buildings expressed in terms of simple elements and first principles of design, this environmental influence should be reflected in the students' search for first principles and should result in the triumph of reason over rote.



When We Design with Today's Materials

TODAY COLLEGES AND UNIVERSITIES are trapped in the high fenced triangle of high building costs, demand for expanded facilities, and limited budgets for building.

An architect, asked to advise on new materials for college building, might be tempted to expound shining arguments on how new materials and new technics can help colleges build for less money. And many of us think that we could design less expensive but better buildings than we do now. But to do so, we need at our disposal more advanced building technics than the industry now offers.

TOO EXPENSIVE FOR TODAY

In time, through the cooperation of labor, industry, contractors and the revision of outdated building codes, more advanced technics will evolve to use efficiently some of the new materials available but too expensive for the ordinary budget.

There can be a radical approach to a discussion of "new materials." We might consider materials in relation to those that could be produced if the building industry operated on assembly line technics, if Willow Run throughout the country could turn out our college buildings like they turn out our automobiles. That being so, beautifully designed college buildings could be erected in a week or a month, all glistening with the best and finest features of this year's models. Undoubtedly the materials in them would be "new" to us, the products of organized, extensive, well financed laboratory research programs which would coordinate the actual construction technic with the material.

But generally we still build in the manner of the Greeks and the Egyptians. True, we are comparatively more efficient in that we have machines for our heavier work, and our buildings are more weather tight and have the added comforts of heating or cooling, and artificial ventilation and illumination.

JOHN LINDSTROM

Magney, Tusler & Setter
Architects and Engineers
Minneapolis

Our building industry is still pretty much a stick-to-stick and stone-on-stone operation. And the materials we shall speak of as "new" are in many cases better substitutes for older materials. These "new" materials, for the most part, are manufactured to fit into today's technic of building, and their advent produces relatively minor changes in building methods. So an article written to advise colleges on new materials for their buildings can give no view into brave new worlds in which colleges next year will get buildings much faster and for half price through industrial technics. It can point out relatively new materials that will contribute to better buildings, and it can guess a little as to what some of us may expect in materials and how they can effect more efficient building technics in the foreseeable future.

NOT LIKE "OLD MAIN"

This article should point out that even the materials and technics available, if really efficiently used, will produce buildings very dissimilar to the familiar Gothic and Renaissance façades liberally dotting today's campus. College presidents, regents, trustees, faculty, alumni and students should not expect imitations of "Old Main" when we design with "today's" building materials.

An article of this length can discuss only briefly these new materials. It would be best to examine them according to their use.

Exterior Wall Materials. New members of the family of exterior wall materials are anodized aluminum sheets, asbestos cement boards, precast concrete slabs, sheet plastics, and ferrous enameled panels. Any of the foregoing

mounted on a light structural frame, with insulation behind them, could make a lightweight permanent, weather tight wall. When we consider one of these materials as appropriate for a new building, we are faced with the tantalizing prospect that maybe "now" it will be less expensive than brick, stone and like familiar materials. To date, our research shows that they are not economical as yet, but indications are that it won't be long before they may be.

CLASSIC FACADE IS HANDICAP

Windows. Elementary and grade school architecture has progressed rapidly toward the solution of the well lighted classroom. Only in comparatively few instances has college architecture met the problem at all. This, we think, is largely due to adhering to past styles. Much as the architectural profession enjoys pulling rabbits out of hats these days, we cannot pull well lighted classrooms, laboratories or offices out of the old battered hat of the classic façade.

The glass industry has available for our windows large sheets of plate glass and a relatively new material consisting of two sheets of plate glass, 1/4 inch apart, hermetically sealed at the edges. The latter is an insulated window that reduces the possibility of down drafts and condensation.

Our forefathers could make only small lights of glass, so their windows were broken up into small panes. But today we can light the modern classroom or laboratory with windows consisting of large sheets of single or double thickness glass separated by narrow mullions. Experiments in colleges and universities lead to conclusions that this type of window provides much better lighting, but often college authorities reject these conclusions when they see how they affect the appearance of the buildings. It is true that breakage of large sheets of glass means expensive repair, but a



compromise between large and small glass sizes is easily effected.

The glass industry also offers types that can reduce glare, reduce solar heat transmission, reflect light rays farther into the room or up to a reflective ceiling, and transmit a maximum of ultraviolet rays. Many of these are applicable to college buildings, especially to use in classrooms and laboratories.

MERITS OF METAL WINDOWS

Aluminum and other metal windows offer certain advantages over wood windows. The latter must be constantly checked for deterioration, and painting is a continuous necessity. Anodized aluminum sash need no painting whatsoever, and we have found them in some cases to be competitive with wood sash in price. Then, too, metal windows are graceful in appearance and, because they are thinner in section, admit more light into the rooms.

Contemporary architecture is taking advantage of the use of large sheets of glass set in fixed aluminum frames combined with smaller sheets of glass set in operating aluminum frames. This leads to interesting window patterns based on the logical requirements of natural lighting, good ventilation, and ease in cleaning.

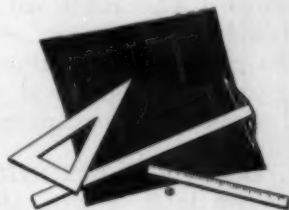
Interior Wall Surfaces. Probably 99 per cent of the interior wall surfaces of college buildings are painted plaster. Why is this? Mainly because painted plaster is the least expensive of interior surfaces for first cost. But college maintenance engineers are confronted with the necessity of repainting plaster walls at all too frequent intervals. What other materials—old or new—can be considered in place of plaster?

To mention a few, consider smooth face brick, concrete block coated with cement paint, precast concrete panels, ferrous enameled panels, plastic coated plywood panels, cement asbestos boards, metal or cement asbestos boards, acoustical panels, textured or striated plywood panels, or even our old friend wood in its familiar board form. One may select either rough textured surfaces, like brick or concrete block, which do not show wear or dirt, or smooth surfaces, like ferrous enameled panels, which attract no dirt and

are too hard to be damaged. To afford pleasant contrasts and avoid monotony, it would be well to use textured, mellow surfaces and smooth surfaces together.

Floors. In the average college building, floors are the day-in and day-out maintenance problem. Usually the older buildings have wood strip flooring, which often is in bad condition because of warping, bulging and lack of careful maintenance and finishing. Modern impregnated wood block floors, factory finished, are a great improvement over the common wood strip floors, for both maintenance and ease of repair. The individual blocks can be replaced easily if necessary, whereas the strip type of floors cannot be replaced without large sections being torn up.

Rubber and asphalt tile offer tremendous possibilities for durability, ease of maintenance, ease of replace-



ment, and variety in color and pattern. Rubber tile is exceptionally valuable for reducing noise in corridors. The only disadvantage these two materials have, in our experience, is that the plain colored tiles or the dark variegated tiles show dirt and foot marks easily. But variegated patterns of medium light value show a minimum of marking.

A plastic tile floor is now available. It is so new to our region that we have as yet to test it for general wear, breakage, mopping, and brushing. The infinite variations in formulas for plastics should lead to the firm establishment of this as highly desirable flooring.

Ceilings. Acoustical ceiling materials, such as acoustical plaster and perforated tiles of cane fiber, metal and cement asbestos, have proved successful. In fact, the reputation of acoustical ceilings has lead sometimes to their use where they are not only unneces-

sary but undesirable. The ceiling of the college lecture room seating thirty people need not be acoustically treated, since the room is so small that the lecturer speaking in a normal tone can be heard in all parts of the room. Generally, in a larger lecture room, the ceiling should be acoustically reflective rather than absorbent, since it should reflect the lecturer's voice toward the back of the room. In this case, the back wall should have acoustical treatment to trap the sound waves there.

However, in corridors, libraries, laboratories, studios, administrative offices and study rooms acoustical treatment is generally a "must" on the ceilings, and sometimes on the walls.

LOOK TO GRADE SCHOOLS

Artificial Illumination. The old suspended white glass globe emitting feeble light has been relegated to the same shelf that holds the candle and the kerosene lamp. Fluorescent lighting now dominates the field of artificial illumination. It provides cheaper, cooler and even illumination than any of its predecessors.

But the installation of fluorescent lighting does not solve the lighting problem magically and forever. To maintain the proper amount of illumination that our electrical engineers have calculated, it is necessary to keep the tubes and reflectors clean, otherwise in from six months to a year the foot-candle efficiency can drop as much as 50 per cent.

Colleges in planning the classroom building might well consider the studies made for lighting elementary and grade school classrooms, might notice the emphasis on bilateral natural daylight reinforced by fluorescent illumination. And when bilateral lighting is not possible, the separate switching of fluorescent fixtures on the side of the room away from the windows can still produce a high level of illumination at those areas farthest away from daylight.

We must be continually alert to the possibilities of the revision of building technics coordinated with discoveries of new materials. Some day—and we hope soon—all of us will be agreeably surprised at the effect of this coordination of materials and technics on our buildings.



SCIENCE BUILDING

More Space for Mechanical Engineering

SINCE THE END OF THE WAR THE board of governors of the University of Toronto has authorized an expenditure of more than \$7,000,000 on buildings.

A small part of the money has been spent on purely temporary facilities to meet immediate needs, and a considerable sum has been used to renovate existing buildings, from which a gratifying increase in useful space has been obtained at minimum cost.

The major portion of the money, however, has been committed for two buildings now approaching completion, the Wallberg Memorial Building for the departments of chemistry and chemical engineering, and an addition to the Mechanical Building for the department of mechanical engineering.

The addition to the Mechanical Building has been added as an L to the original building and is located between the Engineering Building and the Mining Building in a manner that

J. E. THOM

Assistant Superintendent of Construction
University of Toronto

has allowed the design of the old building to be abandoned and an entirely new design to be used. Featuring long rows of continuous sash windows and straight lines, the building has a "modern" appearance in contrast to the existing architecture. Floor levels of the existing building have not been maintained and, to conserve space, corridor widths have been kept to 7 feet and ceiling heights to 12 feet.

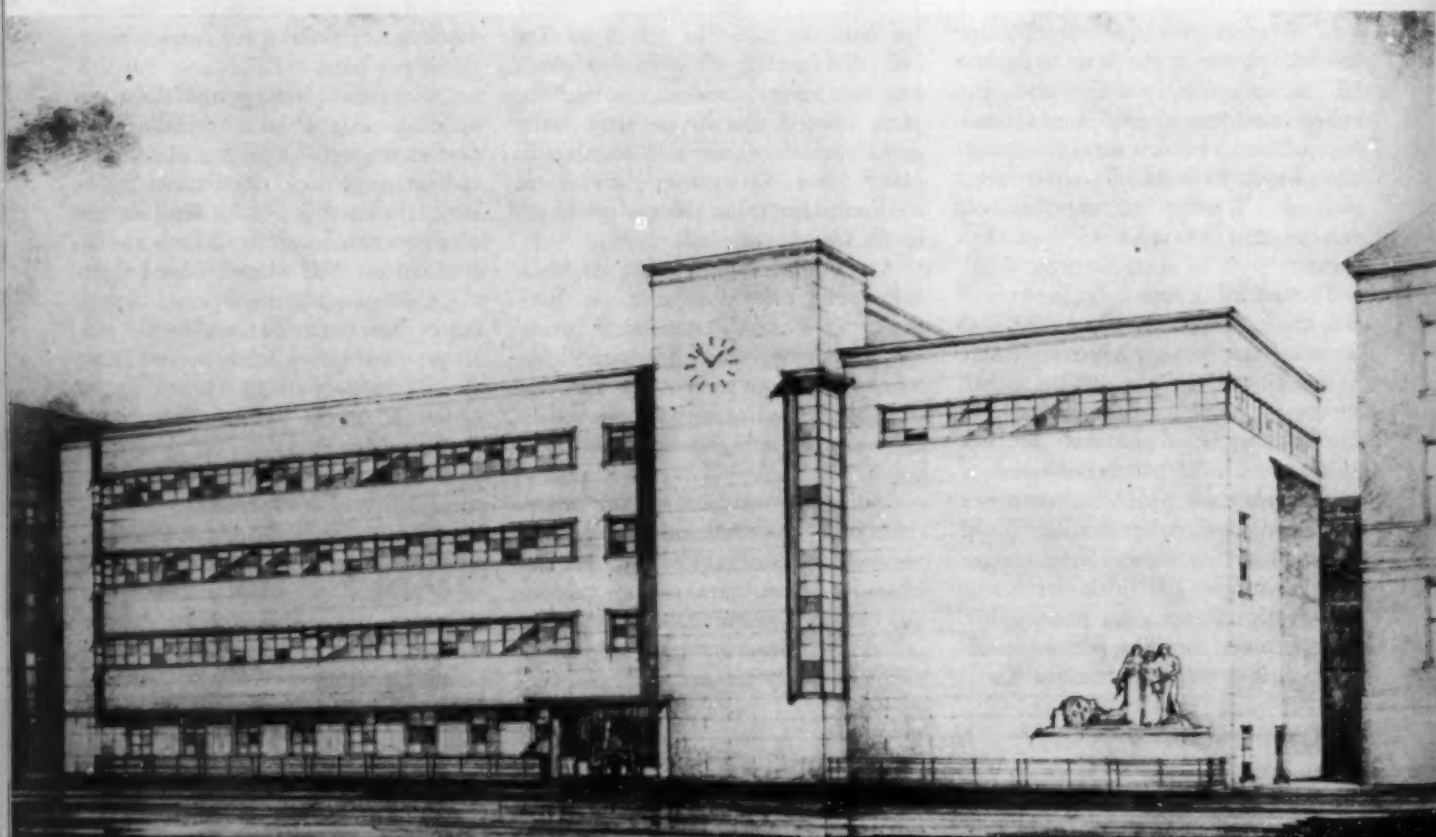
The building is divided vertically into two parts, a laboratory and office section and a lecture room section. The two parts may be separated by locking corridor doors when it is desired to use the lecture rooms for

meetings outside of normal teaching hours.

The lecture room section occupies the southern half of the building from the first to third floors and comprises a large lecture theater, seating 340 persons, with two smaller rooms above, each seating 130 persons. All three rooms are windowless and have complete ventilating systems. Stepped floors have been installed and escape stairs provided at the rear of each room. A machine design laboratory, with desks for 107 students, occupies the fourth floor over the lecture rooms and is an exceptionally bright room with continuous sash windows on three sides and two skylights overhead.

The basement of the building, except for two rooms for the necessary mechanical and electrical services for the building, is one large room for hydraulic experiments. A 6 foot wide, 6 foot deep riverflow trench runs the full 200 foot length of this room.

UNIVERSITY OF TORONTO,
in adding to its original Mechanical Building, completely transforms it architecturally.



SCIENCE BUILDING



Water from a constant flow head tank is available for hydraulic experiments at any point in the laboratory by means of 12 inch diameter pipes carried in checker plate covered trenches.

The four floors of the laboratory and office section each consists of a large laboratory, 77 by 37 feet, on the east side of the main corridor with smaller laboratories and professors' offices on the west side.

The machine shop and library occupy the first floor; the mechanical laboratory and a smaller calorimetry laboratory, the second floor; the third floor houses the air conditioning and refrigeration laboratory, also staff and student common rooms. The fourth floor is presently a drafting room but with a reduction in the number of students from the postwar high it will be made into a museum for the exhibition of early machines. Two small lecture rooms on the second and third

floors will later become research laboratories.

A passenger elevator has been provided, as well as a freight elevator that has direct access to an outside loading dock.

The architects, Allward & Gouinlock, started preparation of plans in 1946. Four floors were in use in January 1949, and the lecture room section and main floor will be ready this spring.

CONSTRUCTION DETAILS

SIZE: 200 by 65 feet. Basement and four floors.

STRUCTURE: Laboratory and office section, reinforced concrete. Lecture room section, structural steel.

EXTERIOR WALLS: Queenston cut limestone.

INTERIOR WALLS: Glazed structural tile; entrance lobby, marble; offices and library, plaster on tile.

FLOORS: Laboratories, concrete; offices, concrete with mastic tile covering; lecture rooms, corridors, stairways and lavatories, terrazzo.

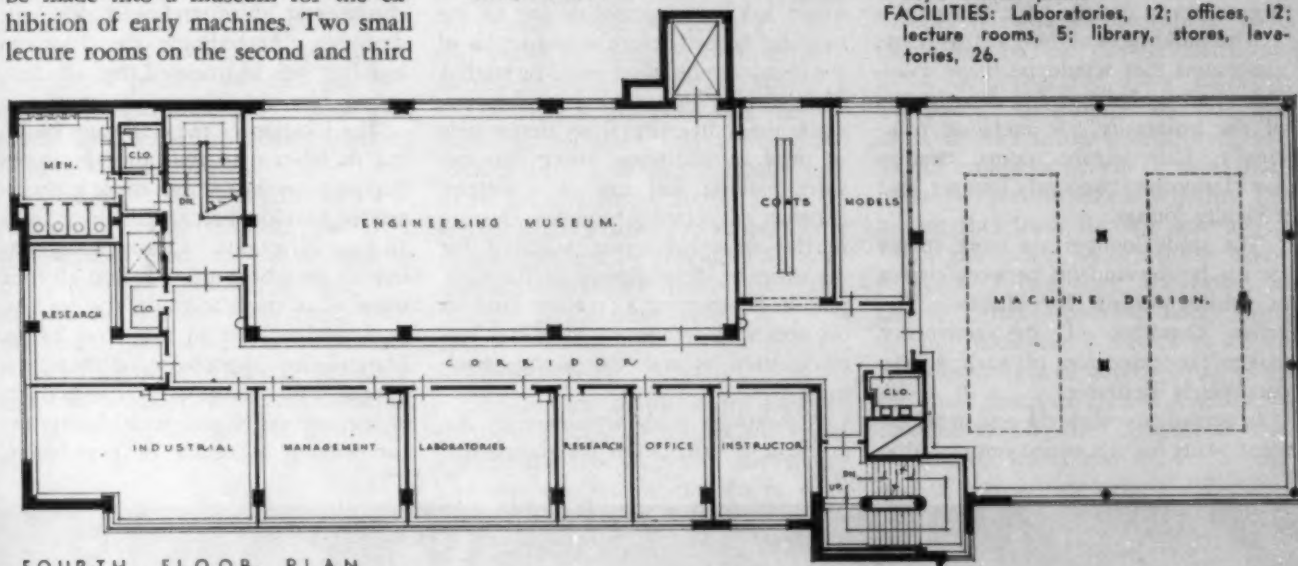
CEILINGS: Painted concrete beams and slab; acoustic tile in corridors, lecture rooms, and library.

HEATING: Cabinet convectors with forced hot water from steam heated convectors; steam from university's central plant.

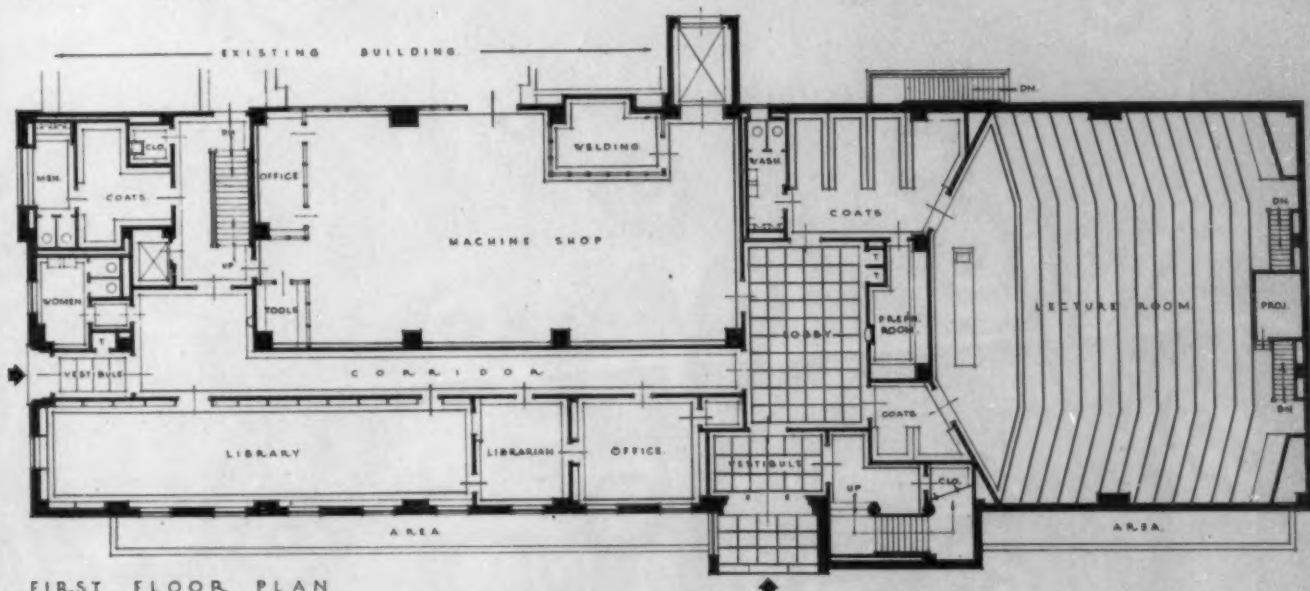
VENTILATION: Filtered air to lecture rooms; exhaust from lecture rooms and labs.

SERVICES: Hot and cold water, air and gas as required to laboratories; power, 550 volt, 25 cycle; general use, 110/220 volt, 25 cycle; 110 volt, 60 cycle from motor generator set; 110 volt D.C. from university's central plant.

FACILITIES: Laboratories, 12; offices, 12; lecture rooms, 5; library, stores, lavatories, 26.



FOURTH FLOOR PLAN



FIRST FLOOR PLAN



CLASSROOM BUILDING

WHERE TEACHING TAKES PLACE

WAYNE UNIVERSITY IS AN URBAN university, owned and operated by the Detroit board of education. It is housed in an old high school building and in a large number of houses.

In 1946 the state of Michigan made a special appropriation for the purpose of constructing and equipping two new buildings for the university. The classroom building is the first of these two buildings to have been started, and it is the first new building expressly designed for Wayne.

The building was designed to house classrooms that would be made available to all the colleges and departments of the university. It includes, principally, four lecture rooms, twenty-five classrooms, two study lounges, and a faculty lounge.

The study lounges are work spaces for use by the students between classes or while waiting for classes. The urban character of the university makes the provision of such spaces particularly desirable.

In accordance with the site development plans for the entire campus, this

SUREN PILAFIAN

Pilafian and Montana, Architects, Detroit

unit is located near the proposed university library in the center of the campus, and it faces a projected mall to the north of it. This mall will open toward the Detroit public library (and the two new wings proposed to be added to it) on the east.

In this location it was possible to avoid having to demolish any of the existing houses before construction of the classroom building could be started. This was an important consideration, since the university is so desperately in need of additional space that besides making full use of a heterogeneous collection of houses existing in the areas heretofore acquired for the ultimate development of the campus, it is covering all vacant land in the area with temporary buildings formerly used as war emergency structures.

A thorough study was made of the problem of orientation for classrooms,

especially in consideration of the fact that at Wayne classrooms would be used almost continuously from early morning to late at night. The problem of shading direct sunlight in order to reduce brightness contrasts within the rooms proved to be the most important factor in determining the relative values of the different possible orientations, and so it was determined that north exposure would be most desirable, south would be second choice, east, third, and west, the least desirable. Accordingly, the classroom building was so oriented that all classrooms face either north or south.

The location of the classroom building in relation to the other projected buildings on the campus made it necessary to provide direct access to it from all four directions. Consequently, entrances have been provided on all four sides, all of them at grade, and leading in a straight line to a central lobby. The relative importance of these entrances will change with the growth of the university and with the resultant shifting of center of population.



CLASSROOM BUILDING



All the classrooms are grouped together east of the central lobby and all the lecture rooms and study lounges, west of it. That part of the first floor west of the lobby can be separated from the rest of the building by an accordion door, and by using the west entrance it can be made independent, even as regards the toilets. This permits use of the two lecture rooms by the public.

The building is three stories high without a basement (except for mechanical services). It will accommodate about 1500 persons at one time in the classrooms, lecture rooms, and study lounges. The plan permits the addition of a wing at the east end.

FLEXIBILITY

At the outset the architect was instructed to plan the building as flexible as possible. This meant that the various spaces should be planned for a variety of possible uses and that the structural features and equipment should be designed to permit changes to be made economically.

However, it was recognized that a completely flexible building would be considerably more expensive than a building having ordinary flexible features. Because it was necessary to plan the building to provide the maximum facilities possible with the available funds, it would have been unwise to spend money in needless flexibility,

so the following program was adopted.

1. It should be possible to divide each of the larger classrooms into two smaller ones.

2. It should be possible to combine adjacent classrooms into larger spaces.

3. It should be possible to add a fourth floor to accommodate faculty offices.

The first of these was accomplished by placing a window mullion and the wardrobe recess in the center of each of the large classrooms, and by allowing for a space in the corridor wall, free of ducts, for the opening of an additional doorway. In addition, the heating, ventilating and lighting equipment was so arranged to facilitate such a change. None of these provisions added to the cost.

The second requirement was met by building all intermediate partitions with cinder block, in such a way that they could be removed without permanent injury to structure or finish.

The third requirement was met by planning the stairs and elevator according to a preliminary layout prepared for the future fourth floor, by designing the structure to support such an addition, and by providing for connections between future structural columns and present ones.

LECTURE ROOMS

The lecture rooms were designed to provide ideal conditions for visual education. The shapes of the rooms and the profiles of the floors were determined entirely by the requirements of sight lines to the projection screens. Thus, the rooms were planned from the inside out instead of being adapted to a building shape imposed by other considerations. No windows are provided, so no blackout problems will exist. Nonparallel cinder block walls in the seating areas and Keene's cement walls at the lecturers' platforms will help the acoustic qualities.

Seating is provided by fixed swivel seats placed behind fixed continuous radial tables. The rows of seats are

spaced far enough apart so that as many as twenty-six seats can be provided in one row without an intermediate aisle being required.

Sliding blackboard panels permit the convenient use of either blackboards or a projection screen at the platform. An alcove is provided at the rear for 16 mm. projection equipment, with a raised platform and with cabinets for storing equipment and supplies. A public address system is provided in each lecture room.

CLASSROOMS

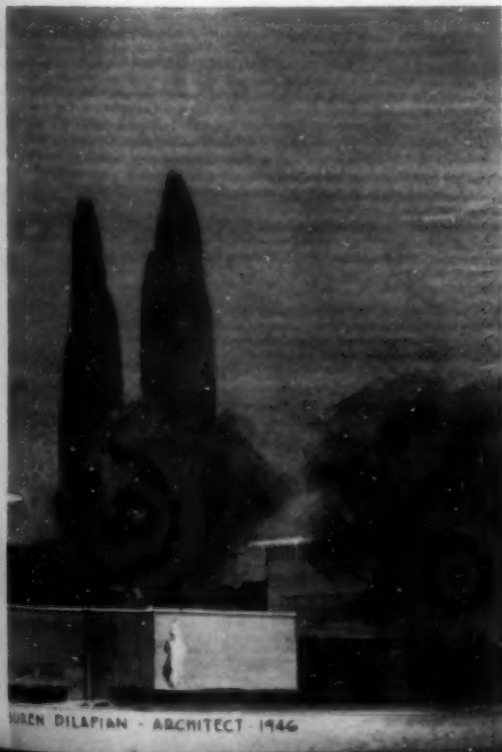
At the front walls of the classrooms, the blackboard panels are placed in a considerably higher position than is customary so as to improve visibility from all parts of the classroom. The bottom of the blackboard is placed 4 feet above the floor, and the top, 8 feet. A movable platform is provided for the use of the instructor so he can reach the upper parts of the panel. It is expected that the inconvenience to the instructor caused by this arrangement will be more than offset by the increased visibility resulting therefrom for the students.

On the other walls of the classrooms, a 3 foot high blackboard is placed 4 feet from the floor, since writing below the 4 foot level would be awkward for an adult. In all cases the chalk trough is placed a sufficient distance below the bottom of the blackboard so as not to be in the way of the writing arm.

Since students will be moving constantly from building to building, and will therefore be carrying coats with them during most of the school year, an alcove equipped with wardrobe racks is provided in each classroom.

FENESTRATION

The design of fenestration for the classrooms was given considerable study, both as regards the quality, amount and control of light and as regards adaptability to the requirements of interior space divisions. Classrooms have continuous windows with structural concrete columns spaced on an 8 foot 2 inch module, thereby allowing three bays for classrooms seating thirty-two and four bays for classrooms seating forty, and permitting the subdivision of the larger



WAYNE UNIVERSITY, Detroit, is constructing a hall with 25 classrooms, four lecture rooms, two study rooms, and a faculty lounge, ideal for urban college.

rooms into smaller classrooms and the combination of rooms into larger rooms. To permit making such changes at minimum cost, each bay is heated as a unit independent of its adjacent bays. Window heads extend to the ceiling in all cases.

To reduce the objectionable aspects of the sun's rays entering the classrooms on the south side of the building, three schemes were considered: (1) directional glass blocks in the upper parts of the windows to deflect the direct rays of the sun upward toward the ceiling; (2) window shades; (3) adjustable metal louvers. Of

these the first was selected as being the most serviceable and economical.

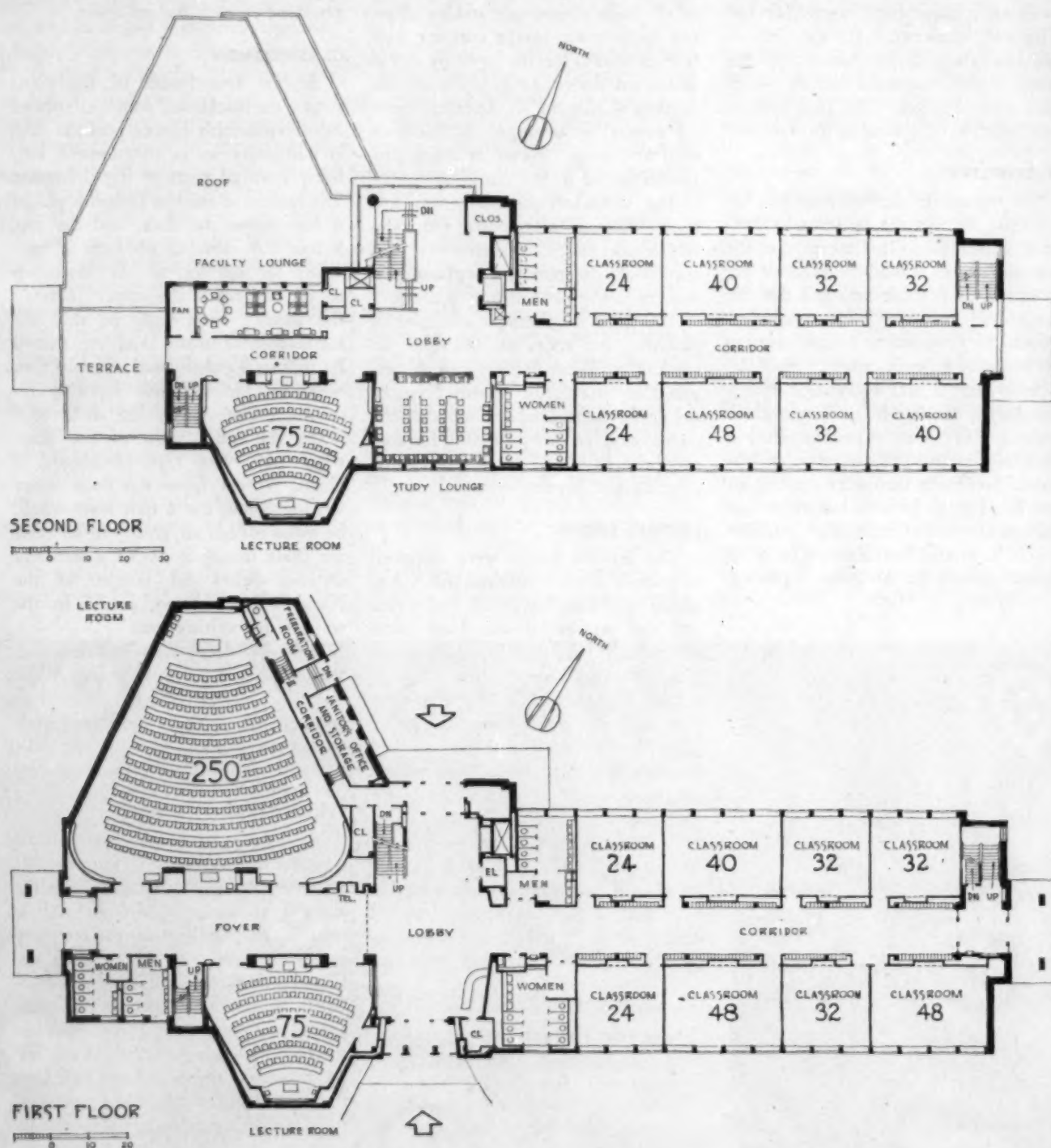
WINDOW CLEANING EQUIPMENT

To eliminate the infiltration of dust as much as possible, classroom windows are almost entirely fixed, with only a small vent being provided in each bay for emergency use. This feature and the large extent of glass block used on the south side made it necessary to provide a convenient means of cleaning the outer surfaces of the windows.

This was accomplished by incorporating a continuous monorail under

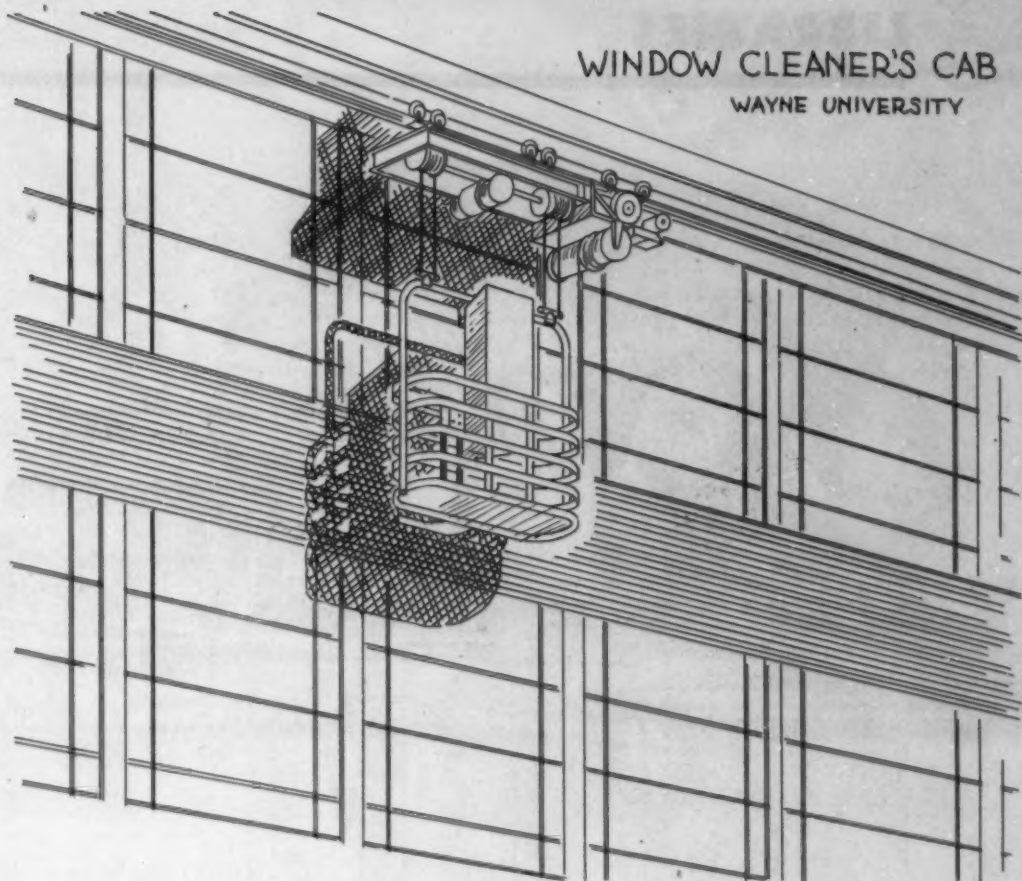
the roof canopy around most of the building, from which a cab will be suspended by cables. By means of electric operation this cab can be moved both horizontally and vertically, permitting quick and easy access to the windows.

This feature not only will allow the window cleaning to be done at a fraction of the cost of cleaning by conventional means but also will assure the windows being cleaned more frequently. This is especially important for the deflecting glass block, which would lose much of its effectiveness as dirt accumulated on it.



WINDOW CLEANER'S CAB WAYNE UNIVERSITY

From a continuous monorail under the roof canopy around most of the building, the cab is suspended by cables. By means of electric operation it can be moved both horizontally and vertically, permitting quick and easy access to the exterior panes.



The reentrant forms of the building walls in plan, at the corners, permit carrying the track around the corners without the outswing usually required under such conditions. A continuous rubber bumper around the cab prevents its injuring the building. When the cab is not in use, it can be placed, without removing it from its track, in a room within the building, through an opening in the wall that can be closed by means of a sliding door.

The cab is furnished with a 50 gallon water tank so that an ample supply of clean water will be available to the cleaners without going into the building each time fresh water is needed.

Fixed lights are provided in the large window at the main stair halls on the north side of the building. Access to the glass for cleaning is provided by a series of horizontal ledges accessible by means of a built-in ladder, and used with the aid of continuous pipe handrails.

MATERIALS AND COLORS

The structure is a reinforced concrete skeleton with exterior walls of dark gray face brick with cinder block backing. At entrances, simple areas of Mankato stone, both inside and

outside the building, are used. Windows are of steel. Canopy fasciae, copings and other trim are of aluminum.

Glazed tile wainscot is used in lobbies, corridors and toilets; cinder block walls are used elsewhere, including classrooms. Acoustic tile is used on ceilings except in lecture rooms. Terrazzo floors are employed in lobbies and corridors on the first floor; asphalt tile floors in classrooms and elsewhere; cement floors in lecture rooms. Stairs are of steel with precast terrazzo treads.

Warm colors are used in classrooms facing the north and cool colors in classrooms facing south. Lobbies and corridors on each floor are in markedly different colors to facilitate identification. Glazed tile in the first floor lobby and corridors is speckled gray; on second floor, light yellow, and on the third floor, dark green.

MECHANICAL EQUIPMENT

Heating and ventilating is by means of an indirect warm air system. Fresh air is supplied by two fans in the basement that draw the air through tempering coils and through air conditioners of the capillary type and then blow the conditioned air into two plenum chambers. As the warm

air leaves the plenum chambers through ducts that lead to outlets at window stools in the classrooms, it is further heated by individual booster heaters controlled by thermostats placed in the rooms to be heated. Ceiling diffusers are used in the large lecture room.

Return grilles are at the corridor sides of classrooms. In cold weather a part of the returned air is diverted to the supply fans, and a part is exhausted through gravity ventilators at the roof.

The source of heat is the Detroit Edison Company's power plant, located a distance away from campus.

Artificial lighting is largely cold cathode, with exposed hairpin tubes in the classrooms and recessed troffers in the lobbies and corridors.

A clock and signal system is provided that will permit the coordination of the clocks and signals in all the buildings of the university with a centrally controlled master clock and program machine.

The approximate gross volume of the building is 786,000 cubic feet, and the construction is estimated to cost about \$900,000, or about \$1.15 per cubic foot, not including such items as movable furniture, landscaping and architects' fees.



How a Flexible Library Plan Evolved

THE BRADLEY UNIVERSITY LIBRARY, now being erected on the campus at Peoria, Ill., is an important part of the school's rapidly expanding educational program. The existing library has been hopelessly inadequate for years, and it was decided that one of the first important permanent additions to the campus in many years would be a modern structure that would provide the best type of study facilities.

Before designing the Bradley Library, the architectural firm of Emerson, Gregg & Briggs made an extensive study of many new and proposed college libraries from coast to coast. With the information obtained, the architects, working with the faculty library committee, were able to crystallize a program that will adequately satisfy the educational requirements. The resulting design incorporates many innovations in library planning.

The new library building will be specially suited to the latest theories

C. C. BRIGGS

Emerson, Gregg & Briggs
Architects and Engineers

of *library-student relations* and will have the maximum of use flexibility. Many future changes in library operation will be possible with a minimum of alteration cost, and physical expansion is planned for in a manner that will not detract from the original design, or disturb the efficiency of the various educational functions.

One of the chief principles upon which libraries are being planned is that which allows the student free and complete access to all stack areas. Coupled with freedom of use is the need for adequate reading comfort near the book source. Finally, as a result of the aforementioned, it is necessary to be able to interchange stack area with reading area. Likewise, with the desire for more segregation of subject areas of varying size, it becomes

advisable to arrange ventilation and lighting so that each structural unit or sectional area can function independently.

The building in its present construction phase calls for a capacity of 150,000 volumes and space for 500 readers, but units for more than double this capacity can be added easily in line with the over-all campus program. In fact, the general type of construction and space relationships are such that the edifice could be used well for many varied, nonlibrary, educational purposes.

Several structural systems and air conditioning distribution plans were considered in the interest of obtaining the desired flexibility. Naturally, the old system of independent stack units crowded together tier upon tier in one part of the building, completely set aside from the usually large and formal reading room with high ceiling in another part of the building, did not in any way satisfy the pro-



Left: General perspective from the southwest showing the street entrance to the Bradley University Library now being erected at Peoria, Ill. Below (top): Two rows of surface mounted fluorescent fixtures provide a minimum intensity of 60 foot-candles at working plane. (Bottom) With stacks and carrels in a different orientation, the same fixtures may be shifted to locations with approximately the same light intensity.

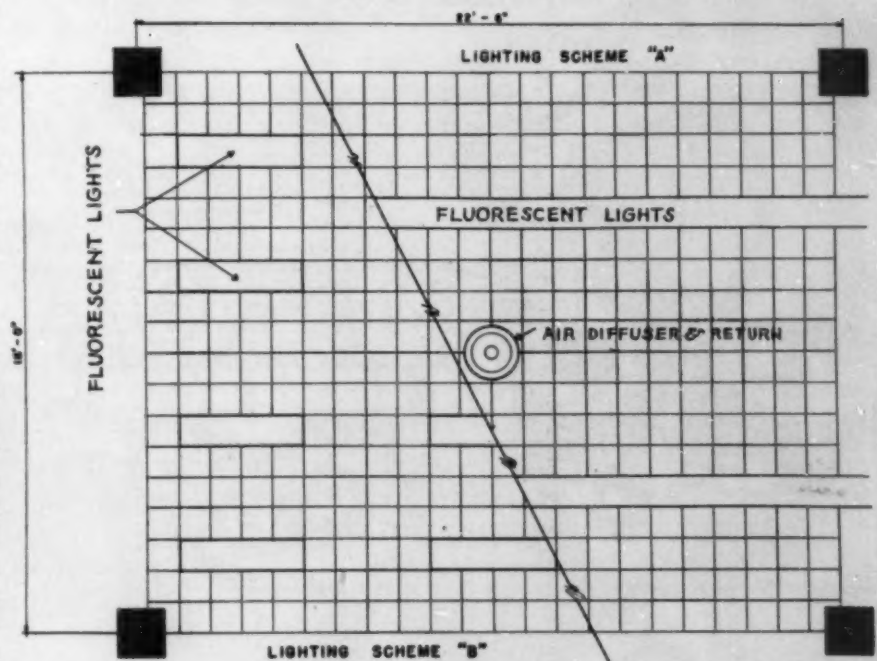
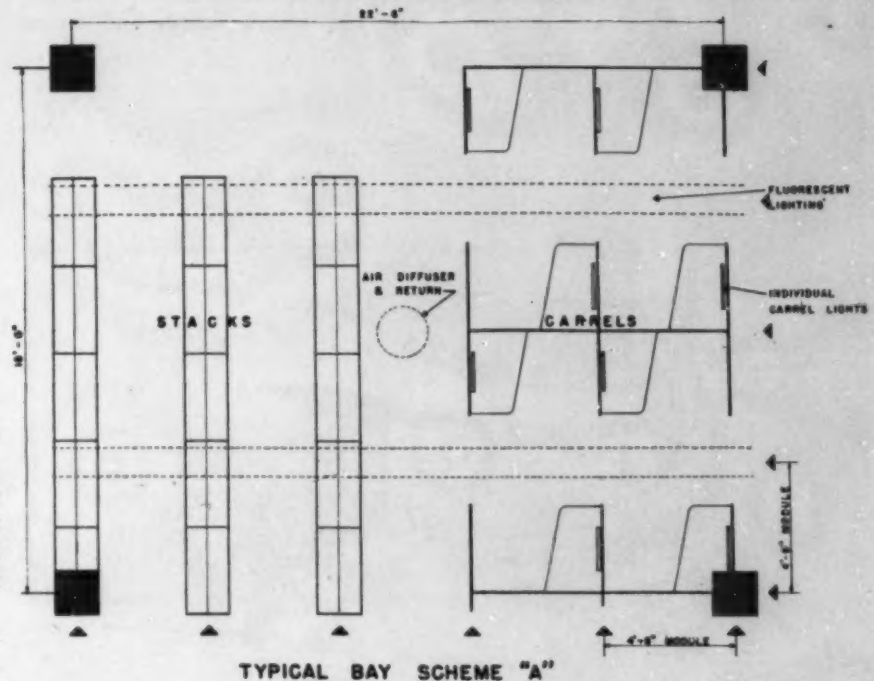
gram requirements. The theory of uniform ceiling height (9 feet floor to ceiling) for reading and book areas alike was accepted after considerable deliberation, and it was decided that all floors in the modular design should be able to carry the maximum book stack load.

The use of hollow structural columns and double beams for the distribution and return of air had been proposed and analyzed at great length. What seemed to be a rather clever combination at first turned out to be an expensive handicap rather than a benefit to flexibility. The hollow column is complex and takes more floor area than is necessary with other systems. The cost was greater and in no way warranted considering the desire for maximum modular uniformity.

CHANGE STRUCTURAL SYSTEM

A structural system with beams beneath each stack range was discarded in favor of one permitting the stacks to be placed in either direction. The use of the space above the ceilings as a plenum, with distribution of air through perforations, was also rejected because of its lack of adaptability to different types of room and carrel uses.

In order to meet the program requirements this library has been planned on a basis of a module $4\frac{1}{2}$ by $4\frac{1}{2}$ feet. Each structural bay or



TYPICAL BAY - LIGHTING - REFLECTED CEILING

unit is 18 feet wide by 22½ feet long (or 4 modules wide and 5 modules long).

All of these bays have conventional concrete joist floors designed to carry a maximum concentration of stacks in either direction. The space between the deep beams supporting the joists has been utilized for the trunk ducts supplying the various zones of air conditioning, with the relatively small branch ducts to each bay using the additional space below the concrete joists. In this manner an economical thickness of floor construction has been maintained, with flush ceilings in all rooms.

Because of the relatively low ceiling heights and because of the desire to preserve the books under controlled temperature and humidity, it was decided to install complete year-round mechanical ventilation and air conditioning with refrigerating coils in the plenum for summer cooling and heating coils for winter use. Convectors are to be installed under exterior windows to compensate for heat loss when the building is not occupied and the mechanical ventilation is shut off.

The university has a central heating plant, thus eliminating the necessity of separate boilers in the library building. The branch supply and return

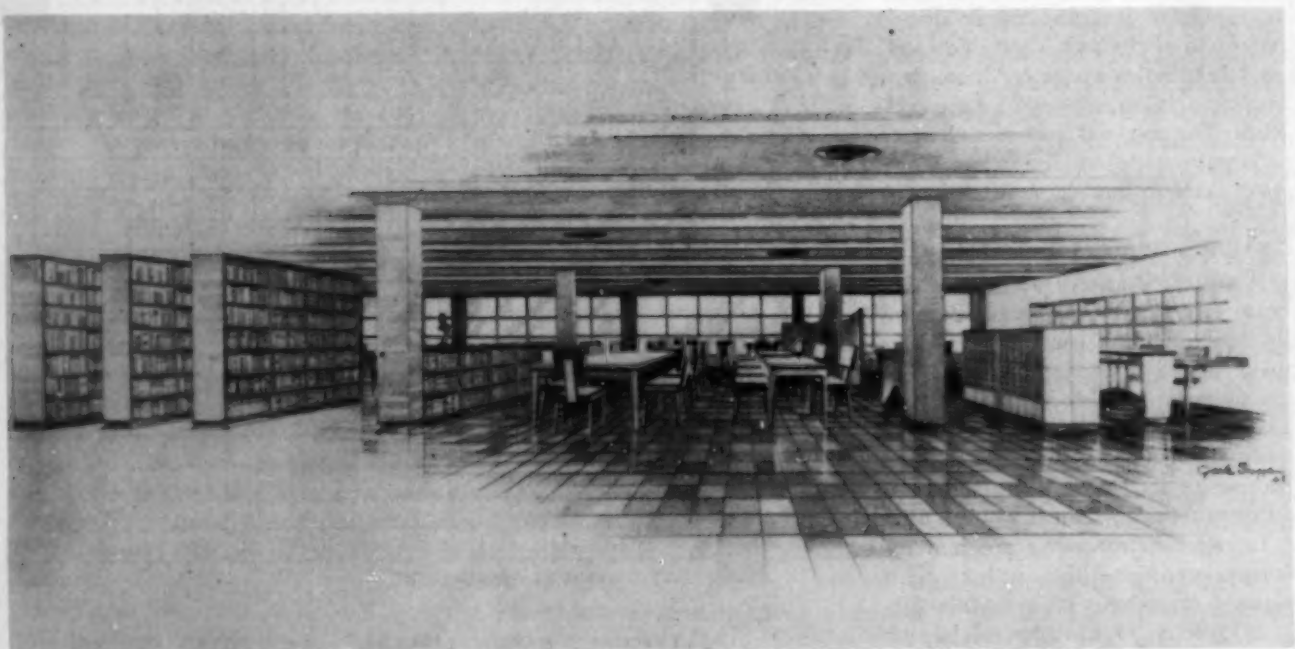
duct to each bay serves as a combination supply and return air-diffuser, making each bay a unit capable of becoming an independent room and at the same time providing an ideal ventilating system for general stacks or reading areas.

The removable metal acoustic ceiling provides a lighting flexibility so that fixtures may best be oriented with any stack or carrell arrangement. In "A" in the module drawing on the preceding page, two rows of surface mounted fluorescent fixtures provide a minimum intensity of 60 foot-candles at the working plane. In addition, the fixture being used will shed enough light on the ceiling to avoid the contrast so often found with recessed troffer lighting. With the stacks and carrells in a different orientation, the same fixtures may be shifted to other locations providing approximately the same light intensity. No additional circuits or switches are required for the flexibility. The modular diagram shows the relationship among stacks, carrells, air conditioning and lighting.

Maximum use has been made of the ground floor, which opens onto an outdoor terrace in a pleasant portion of the campus. This provides a cool



Left: Interior view of Wyckoff Room. Balcony is reached by a stairway starting near door in background. Below: Typical view in reading area showing possible placement of stacks, tables and cataloging area.



and peaceful place for spring-through-fall reading enjoyment. The terrace, as well as the building, has been located to make best use of a number of fine trees on the site.

Greatest possible use of north light has been attained in the reading rooms with large areas of glass, which also provide a view of the campus and reading terrace. Offices and supplementary rooms are placed on the south, and bright south light has been admitted only where limited amounts are desirable, and then through windows that will admit only winter sun. On the west wall nearly all light is screened out as undesirable for the major reading areas.

The service drive ramps down from the west side street to the ground floor service entrance. An elevator, convenient to work areas and reading rooms, is provided for book carts and attendants. Smaller electric book lifts serve the general study areas.

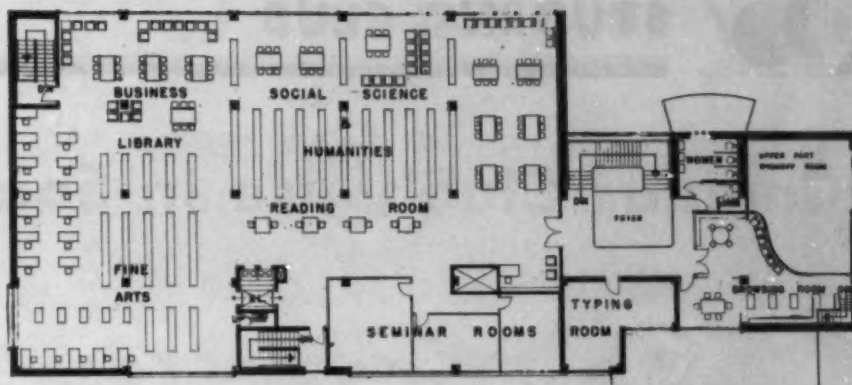
On the ground floor several rooms will be soundproofed for use in sound film projection, record listening, and typewriting. A few seminar rooms and additional typing rooms are planned on the second floor; open carrells are to be placed in flexible positions throughout the stack reading area, conforming to the departmental or subject assignment plan.

The Wyckoff room will be equipped as a formal browsing room with balcony study areas. A kitchenette will make the Wyckoff room serviceable for teas and small receptions. This room as well as the general foyer will be finished with oak veneer walls and the ceilings will be treated acoustically.

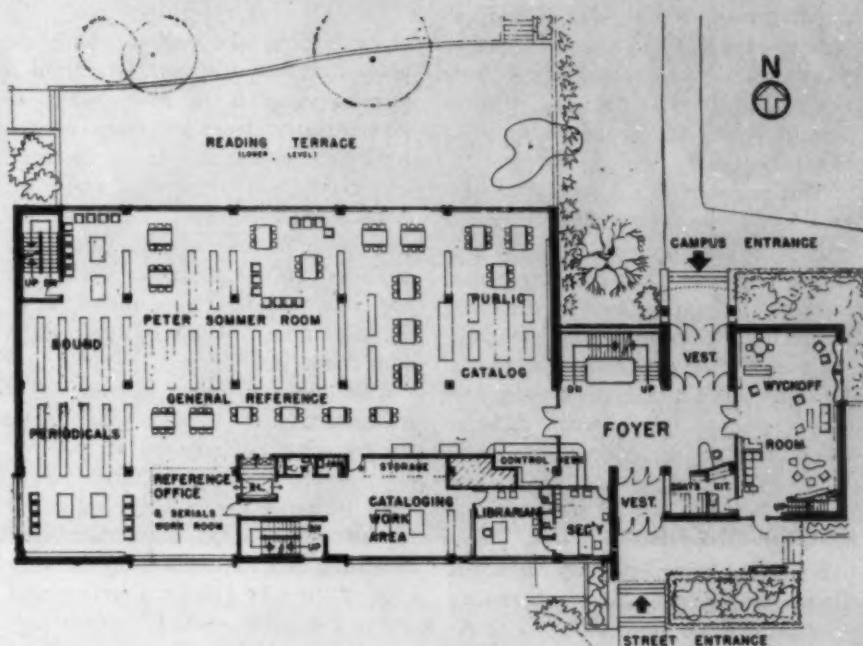
The exterior of the library is to be surfaced with Indiana limestone with detail of gray granite around north and south entrances. Window mullions and door frames will be aluminum and the outlying retaining walls will have vertically rough cut stone facing.

The general floor area consists of approximately 10,000 square feet per floor, and the total volume of the building is 408,000 cubic feet. It is expected to cost \$600,000.

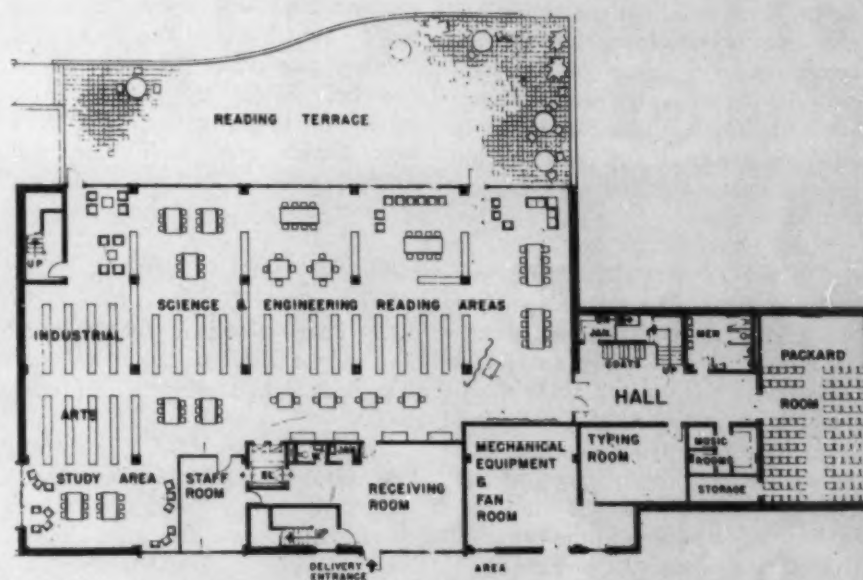
We are making every effort to allow for reasonable growth. The steel in the north wall has been designed to provide extension by modular units to any degree that may be required, and in the immediate future this extremely functional building will be available for a progressive educational development.



Second floor plan showing, in addition to general reading area, seminar rooms, soundproof typing room, and balcony browsing room.



First floor plan showing both the campus entrance and the street entrance, and the general layout with relationship to the campus plan.



Ground floor plan showing the service entrance on the south and the outdoor terrace for spring-through-fall reading on the north.



Campus Clubhouse in Southern Setting

THE UNIVERSITY OF MIAMI, FINDING itself totally unprepared to house the great numbers of returning veterans following World War II and unable to expand in its present location, planned a new campus literally from the ground up on a tract of 260 acres 1 mile west of the original campus in Coral Gables.

The designers of the new university abandoned the heavy Mediterranean style of architecture that South Florida copied in its first great building period twenty years ago in favor of the clean simplicity of reinforced concrete, making use of wide expanses of windows. This provides a maximum of space and light and allows for sheltering galleries and breezeways suitable to the Florida climate.

NEW HOUSING UNIT

Following completion of Memorial Classroom Building with a capacity for seating 2100 students in its forty-six classrooms and lecture halls, the new housing unit was next on the agenda. Sixty acres were selected for the site of this project, consisting of twenty-seven buildings containing 533 complete housekeeping units, each comprised of a group of bedrooms with its own living room, kitchen and bath. Construction was begun in 1946 and the small city housing 2400 undergraduates was ready for full occupancy last fall.

There is a total of 3091 rooms in the twenty-seven residence halls, not counting baths. The cost per student living quarters has not been broken down. However, if the pro-rata cost of this group unit also is made to include the cost of the sewage disposal plant, the maintenance building, and the student club, the division of the total number of residents into the total cost of all these facilities brings it to \$2000 per person, not including the cost of the land.

The student club, built on the edge

MALCOLM ROSS

University Editor
University of Miami

of an 8 acre lake dug to admit the blue waters of Biscayne Bay from 2 miles distant, is in many ways an extraordinary departure from normal academic buildings. It is designed as an eating and meeting place for a future enrollment of 10,000, although, of course, the housekeeping facilities in the residence halls will take care very largely of the needs of the inner man. The university's present enrollment is 8679.

Two miles from the nearest urban restaurants and movie houses, the student club is intended to provide entertainment and sociability. It is a midway meeting point between the residence halls and the educational buildings, and its location on the very edge of the lake gives it a recreational aspect that the students greatly appreciate.

From the day of its opening last fall this club has been one of the most used buildings imaginable. Of concrete block and stucco, it is fire-proof throughout. The stairways, flooring and patios are terrazzo on concrete. Walls are painted in a variety of bright colors, such as a light French gray, navy blue, and emerald green. The patio columns are rose colored.

ACOUSTICAL TILE CEILINGS

Ceilings have acoustical tile throughout. Four enormous fireplaces in the lounges and the clubrooms provide open fires during winter cold spells.

Lighting is indirect, with recessed down-lights in the cafeteria. There is a public address system for student announcements and to carry music from either the outside bandstand or the orchestra stand in the cafeteria. A thirty-piece student orchestra plays

for lunches and dinners. The bandstand, with an instrument storage space, is built over the water and is reached by a loggia.

The terrazzo covered dance patio overlooks the water. The curving enclosures indicated on the plan are planted with royal and fishtail palms. Boats may enter from the lake to the quay, which also divides a water's edge seating place.

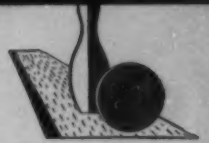
Cafeteria meals may be eaten either within the large dining room or at tables in the adjoining patios and loggias. Some 650 seats are provided, and 2000 meals a day are served. Service is facilitated by having two lines that flow past the two counters, as indicated by arrows. The kitchen was equipped largely from surplus property. Cooking is by gas and electricity. There is a large fan on the roof to provide ventilation. The kitchen and service areas cover 5678 square feet. There are deep freeze walk-ins and an ice-making machine capable of 4000 pounds per day. A bakery on the second floor, above the kitchen space, is served by a dumb-waiter.

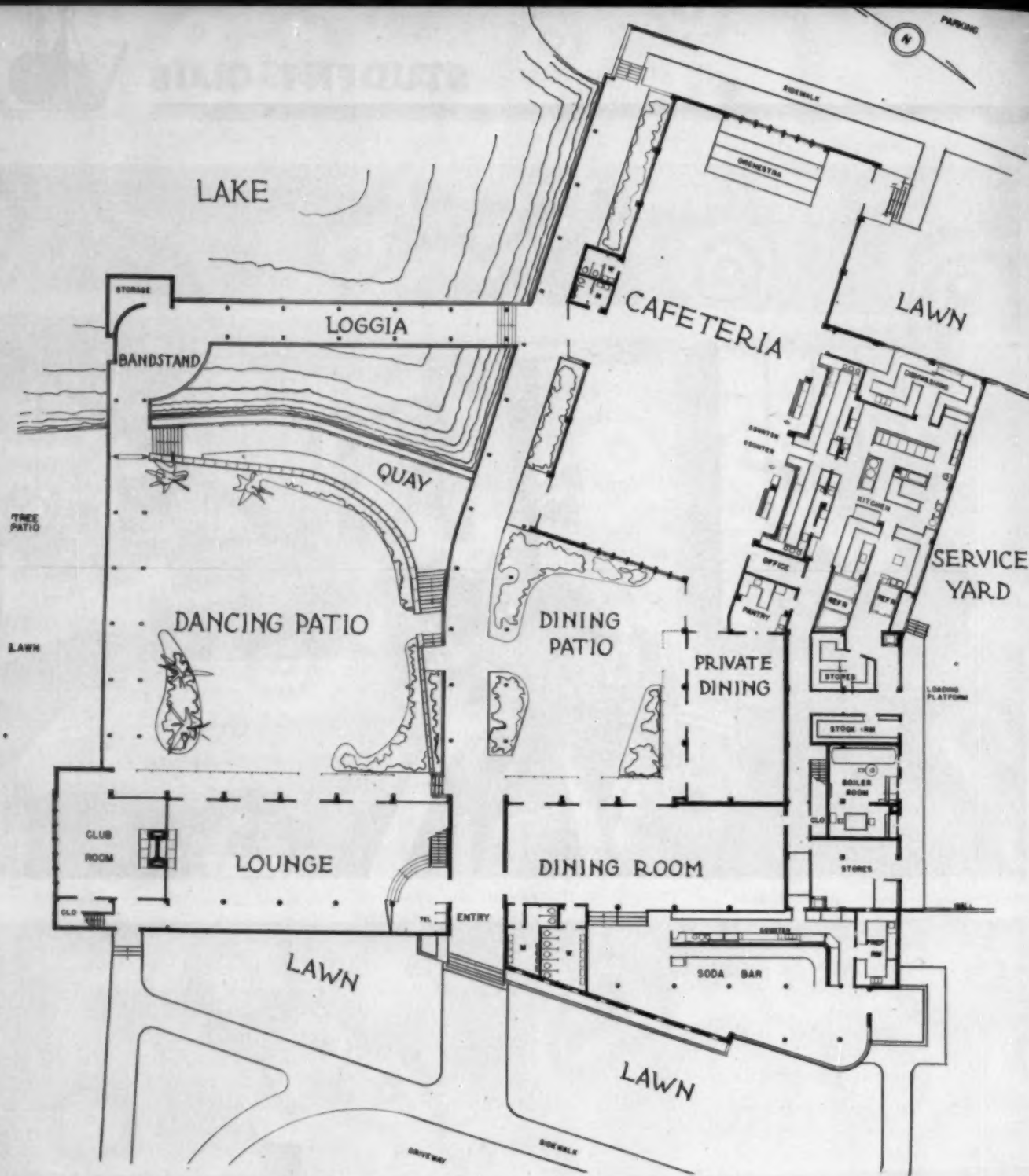
SODA SHOP SELF-PAYING

The soda shop with 225 seats serves 4000 students a day, with an average check of 18 cents. It is open from 11:30 a.m. to 1:30 p.m. and from 7:30 to 11:30 p.m. The shop is self-paying, including the payment of rent to the university—a bookkeeping operation, since the restaurants comprise a university operation. Eating habits in the soda shop run strongly to a few items. There are consumed 1600 bottles of milk each day, 600 hamburgers, and 60 gallons of ice cream. Business over the week ends

UNIVERSITY OF MIAMI student club has four lounges similar to the one shown on opposite page. One section of bandstand is also shown.

STUDENT CLUB





falls off, and the two days amount to about one ordinary week day.

Separate administrative and kitchen staffs exist for the cafeteria and the soda shop.

The newsstand in the soda shop is doing twice as much business this year (with a comparable student body) as it did last year in a temporary wooden building. In the soda shop is a facsimile newspaper outlet that gives news bulletins from the *Miami Herald* daily, and from the

Above: Plan of the student club. Opposite page: Overlooking the quay, with dancing patio to the left.

student publication, the *Hurricane*. The enclosed area of the student club is 30,905 square feet, with 7790 square feet of this area on the second floor. There are 19,560 square feet of outside patios and loggias; the total building area covers 1.3 acres.

The floor plan of the student club is arranged to provide a free flow of

traffic between the soda shop, the patio, and the lounges, a foresight amply justified now that hundreds and even thousands of students press in and out of the club during the peak hours.

Quiet backwaters have been provided in the wing overlooking the patio with its huge lounge and club-room on each of the two floors.

In furnishing these rooms stress was placed on the durability of materials. All chairs and cabinets are of solid



ash. The upholstery is covered with a washable plastic. Floor coverings are a tightly woven cotton fabric which can be laundered. The drapery patterns throughout the club are correlated with the dominant solid colors in the rooms.

The indoor planting of tropical exotics is in key with the palms in the patio outside. The four large, yet comfortably intimate, rooms provide areas for sociability and quiet reading and are, in effect, the living rooms of the small city of people-

away-from-home, which is what all university housing units must contrive to be.

Architects for the project were Robert Law Weed and Marion I. Manley, with George Farkas handling the interior decoration.



Planned for Art Teaching and Exhibits

THE NEW FINE ARTS BUILDING AT Carleton College at Northfield, Minn., is built into a hill that slopes from the campus level down to Lyman Lake; the principal rooms overlook the lake and the hills beyond.

The design of the building evolves chiefly from two instructional requirements:

1. It was necessary to provide spaces for formal instruction in the graphic and sculptural arts. These are exemplified by the studios for drawing, painting, sculpture and design; the workshop for wood carving, metal work, ceramics, photography and block printing; two lecture rooms equipped for visual aids, and a seminar room for advanced courses.

2. It was desirable to provide an attractive space for display of traveling exhibits and students' work. This would supply informal instruction not only to art students but to all the students of the college as well as to residents of Northfield.

Because of the fact that the lecture rooms will be used by other departments of the college, they were located so that access to them would be through the exhibit space. In fact, the exhibit space is planned as a main circulation space of the building practically to force students to pass the exhibited material.

EXTERIOR CONSTRUCTION

Construction is a combination of bearing wall and steel skeleton, entirely fireproof. The ground floor is a concrete slab on grade. A vermiculite slab, 4 inches thick and 2 feet wide, is laid under the concrete slab at the exterior walls of the principal rooms on the ground floor. The upper floor and roof consist of a concrete slab over bar joists.

Exterior facing is mainly coursed Kasota stone with smaller areas of

MAGNEY, TUSLER & SETTER

Architects and Engineers
Minneapolis

honed Virginia greenstone, especially on the north side. Interior partitions are clay tile and concrete block. Windows in anodized aluminum frames are double glass of the fixed, casement and hopper type.

Flooring in the lecture rooms, exhibit room, offices, main stairs and upper floor corridors is rubber tile. In the faculty studios, it is asphalt tile; in the drawing and painting studios, oak block. The design and sculpture studios and the lower floor corridor have quarry tile floors, while the rest of the lower floor is concrete.

NATURAL LIGHTING

The west wall of the exhibit space is a continuation of the studio wing facing of coursed Kasota stone, and the east wall is a continuation of the faculty wing facing of Virginia greenstone.

The north wall is all glass with a continuous aluminum grille radiator cover below. The south wall is glass except where it is interrupted by the large lecture room. This is finished with vertical birch, which is tongued and grooved and finished natural.

The large lecture room walls are hard plaster painted, except the back wall, which consists of metal acoustical pans. Studio walls are concrete block

painted; other walls are generally hard plaster painted.

Ceilings are acoustical plaster in principal rooms and corridors; rooms in which no acoustical correction is necessary have hard plaster ceilings painted.

Steam heat is furnished from the main power plant. Ceramic kilns in the workshop are gas fired.

ARTIFICIAL LIGHTING

The lighting problem demanded much investigation. The studios are mainly fluorescent lighted and switched to provide flexibility of light intensity in all areas, depending upon the illumination coming from the high windows to the north. Spotlights are provided for the proper lighting of the art students' models.

The exhibit space lighting is a grid system of spots and floods on universal mountings, any one of which can be rotated to throw light on any part of the exhibited material. Special attention was needed to solve the

CARLETON COLLEGE is now erecting this handsome structure, here viewed from the northeast. The lecture hall will be used by all students, as well as townspeople, who are forced to go through the exhibit section to reach the auditorium.



FINE ARTS BUILDING



problem of minimizing reflections from oil paintings and glass covered pictures.

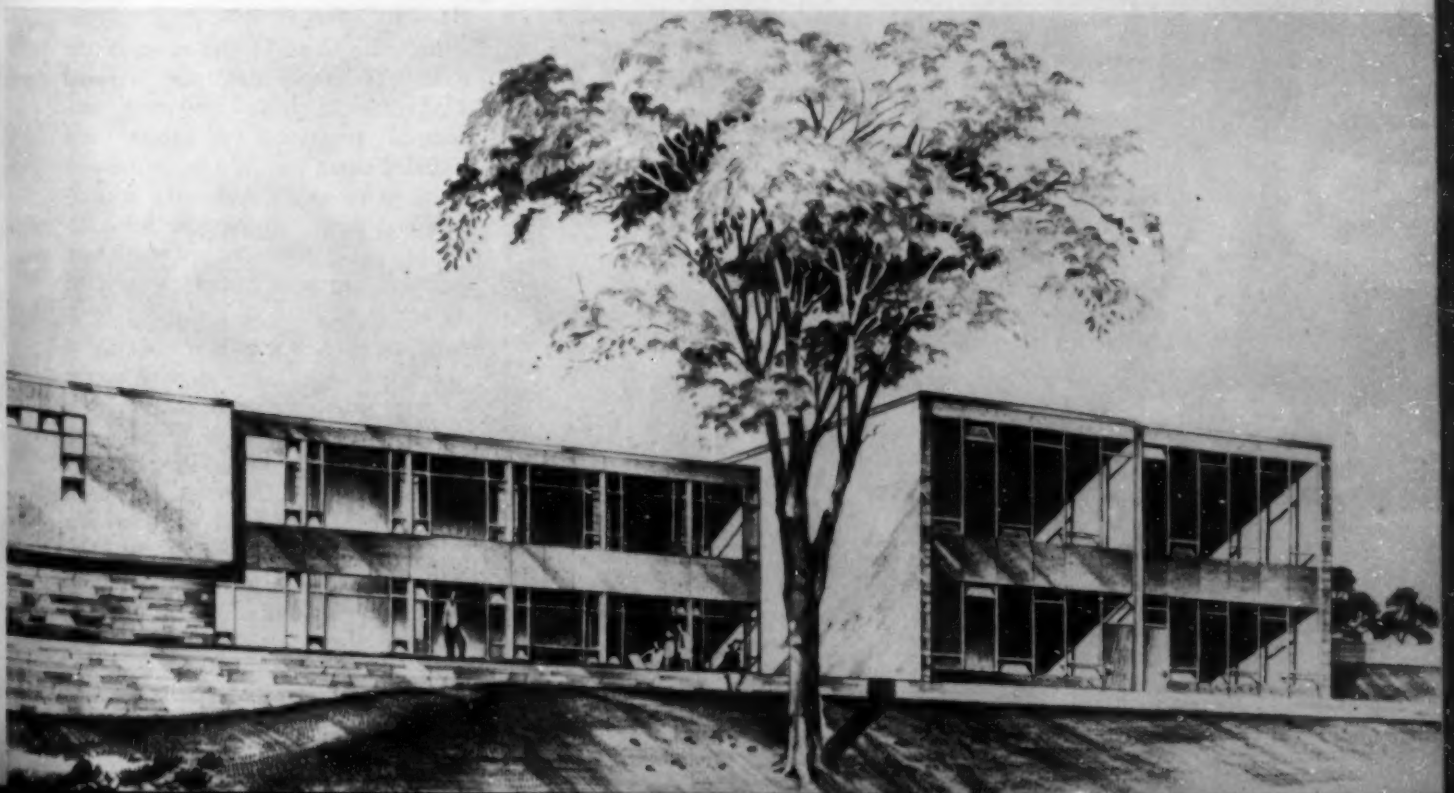
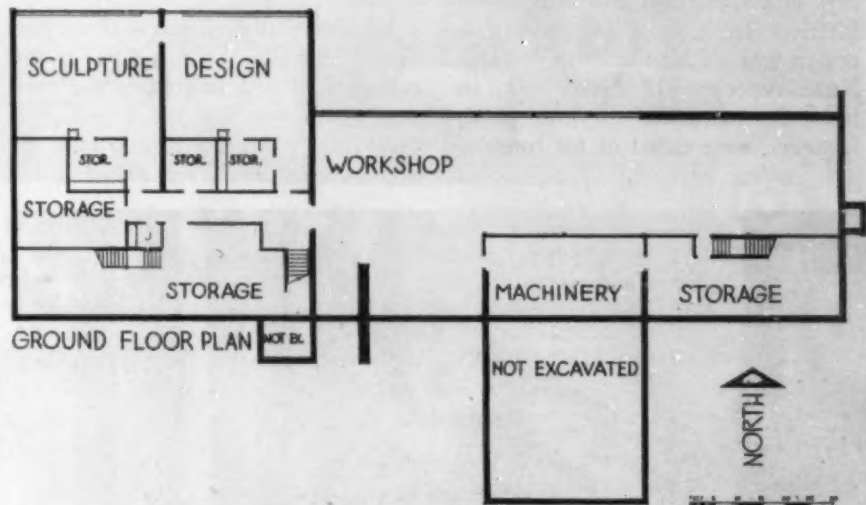
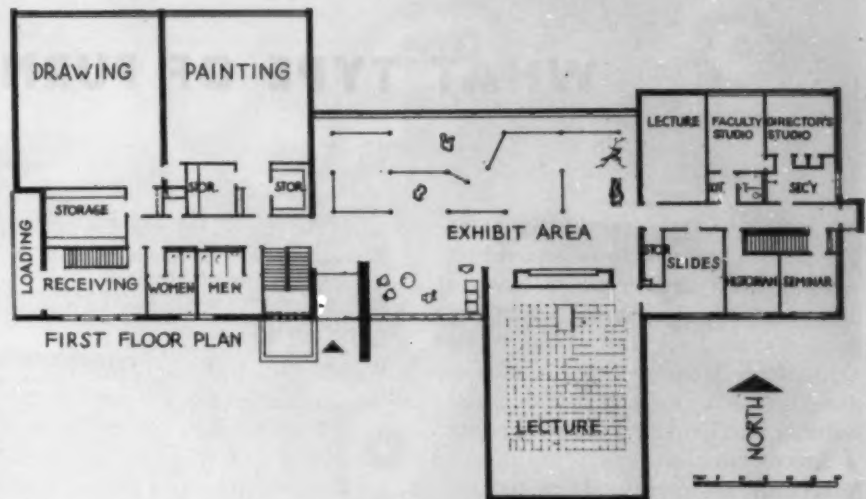
Because personnel available for arrangement of exhibits is limited, it was necessary to design easily mountable and demountable exhibit arrangements. The final design consists of aluminum pipes that thread up from an aluminum base into sockets in the ceiling which are placed on an 8 by 12 foot grid.

HOW EXHIBITS ARE MOUNTED

The exhibit background boards are fastened to these by means of metal buttons on the ends of the boards which fit into slots in the pipes. The background boards are 4 by 4 and 4 by 8 feet, and the longer ones span between these pipes. Exhibit material is hung from or fastened to these boards.

There are also shorter pipes with aluminum bases only. These, too, are slotted to receive the background boards. With the tall pipes acting as fixed pivots, it is possible to span the background boards between them and one or more of the shorter pipes in any direction.

The building is now under construction and will cost \$1.25 per cubic foot, including the general, plumbing, heating and electrical work and the architect's fee.





RESIDENCE HALL FURNITURE

WHAT TYPE OF FURNITURE?

IT WAS APPARENT FROM THE FIRST sketches submitted by the architect that special attention would have to be given to the furnishings of our new women's residence hall, a home for 510 college women. Other residences have been traditional in character, and suitable interior design did not present a difficult problem.

A definite departure from the ordinary procedures of selecting furnishings to a specialized treatment of the interiors for a building modern in design was a "must" in this instance. Knoll Associates of New York, interior decorators and furniture manufacturers, were called in for consulta-

FRANCIS C. SHIEL

Business Manager of Residence Halls
University of Michigan

tion. They studied our problems at length and submitted satisfactory designs of furnishings and interiors that came within our limited budgets. Color sketches and room layouts were worked out and presented for our approval.

Satisfied with their proposal, we pioneered this type of furniture in the college field and entered into a contract with them for the furnishings. From that point on, they worked in

close cooperation with Clair Ditchy, Detroit, the architect, so that interior color design and furnishings would be unified and harmonious.

Starting with light gray sand-finish walls, and with black streaked with white asphalt tile floors in student rooms, we employed three basic color schemes using clear primary colors with a predominance of yellow. Combinations of red and gray were scattered through the corridors to enhance their appearance.

Double student rooms, generous in size, were equipped with two single desks containing drawer and book shelf space, two desk chairs, two chests, two beds of the Hollywood type, and an easy chair. Desk lamps, curtains, wastebaskets and bedding completed the furnishings of the rooms.

The furniture is constructed of selected birch in natural finish. Additional color is provided in the rooms by pleasing combinations of colored cotton webbing on the chairs. Window curtains, when drawn, cover the entire end of the room. The same color is picked up at the opposite end of the room in the curtain covering the closet for street clothes.

In order to make the most of the room, the interior decorator prepared a sketch indicating the most economical utilization of space and included along with it suggested accessories to provide a home-like appearance and simple instructions for making bedspreads and sofa pillows. These sketches were distributed to each of the residents.

Although the students are permitted to arrange the furniture in their rooms as they wish, the arrangement suggested is most livable. It divides the room into its three functions: that of studying, sleeping and dressing. Each girl has her own locked closet with a mirror and make-up shelf on the back of the closet door, in addition to the closet for street clothes and an individual cabinet for toilet articles.





Each room in the University of Michigan's new residence hall for women is planned to serve as living quarters, study and bedroom. The university supplies the basic pieces: desks, chairs, beds, chests, desk lamps, wastebaskets and even curtains. The students provide the accessories that give the room a home-like appearance, and they are given simple instructions for making the bedspreads and sofa pillows.



CORPORATION GIFTS TO PRIVATE COLLEGES



M. M. CHAMBERS

American Council on Education

MANY ENLIGHTENED CORPORATION executives and directors have observed that the relative rôle of gifts from private individuals in financing higher education as a whole is declining and will continue to decline. This is not to say that the total of private gifts this year will be less than it was last year; it is to say that the recent and probable future increase in the demand for higher education compels a larger and larger portion of the total financing to come from public sources—state, municipal and federal appropriations of tax money. The great reduction in the productivity of endowment funds that has taken place during the last twenty years contributes to the same result and supports the same prediction.

HEALTHY PHENOMENON

Many businessmen of large affairs, in common with various other groups of citizens, do not wish to see private charitable support of higher education approach the status of a very minor or negligible factor in the total scene. Scarcely anyone would advocate a complete governmental monopoly of higher education. Numerous and vigorous privately supported institutions are characteristic of a free and pluralistic society, and private gifts to state supported institutions also constitute a healthy phenomenon.

Keenly conscious of the importance of public relations, and well aware that in the long run the prosperity of their businesses is inseparably tied to the welfare of the whole society in which they function, wise leaders of private corporations are favorable toward the idea of corporate gifts to colleges and

universities for their general educational purposes. Federal income tax policy favors corporate charitable gifts up to the limit of 5 per cent of the corporate income.

Some suggestions have been made as to how the idea might be expedited and implemented. They are worth considering. In the first place, it may not be too clear in the corporation laws of some states that the board of directors of a business corporation is unmistakably authorized to make charitable gifts out of the corporate funds. There was once an ancient maxim designed to protect the interests of stockholders and creditors: "A board of directors ought not to be generous first and prudent afterwards."

The whole modern tendency of the courts is to sustain the power of the directors to make charitable gifts in the name of the corporation when the circumstances disclose no evidence of fraudulent intent or abuse of discretion. A number of states have on their statute books a more or less explicit authorization that removes any doubt as far as the scope of its wording goes. In states in which high judicial precedents are absent or leave the question uncertain, it is within the power of the legislature to enact an express authorization.

WHICH COLLEGES BENEFIT?

Assuming that the way is clear for corporate gifts to colleges, and that the will is present, a board of directors of a large corporation will then face such questions as "Which colleges shall receive the gifts, and how much?" Most members of the board will probably

have a well justified sense of the dangers of indiscriminate giving and will be inclined to favor an organized and systematized program. Some will recognize that they and their fellow members usually tend to see their own respective alma maters through a golden haze and will foresee with alarm that the annual allocation of gifts for higher education might descend to the level of log-rolling. In almost any state or region there will be many worthy colleges and universities, and also many business corporations, capable and desirous of giving.

These considerations have led to the suggestion, now being advanced in some quarters, that state associations of colleges and universities should explore, together with representatives of the large commercial and industrial corporations doing business in the state, the possibility of setting up a charitable corporation for the important task of receiving corporate gifts for higher education and allocating them to the several institutions within that particular state.

ORGANIZED CHARITY

We have no space here to argue the merits of this proposal or to debate the structure of the projected charitable corporation or to suggest a foretaste of the problems it would probably encounter. We have only room to note that the proposal is in line with well established principles of organized charity that have in the main been conspicuously successful in American cities during the last generation—in the form of the well known "community chest" for miscellaneous approved charities, and in the shape of the type of charitable foundation usually known as a "community trust." Moreover, the proposal is also in harmony with the thought of some leading educational administrators who believe there is much to be gained from a closer coordination of the colleges and universities within a given state.

The concept is not that of a state-wide system of higher education centrally dominated in an authoritarian manner, but rather that of a somewhat closer cooperation among all worthy institutions within the state, public and private, for the purpose of affording increasingly better educational offerings to the youth of the state. It is possible that systematized giving by commercial and industrial corporations may have an important rôle in this development.

FIRE PROTECTION program

AN ADEQUATE FIRE PROTECTION program in a college should include four phases: the selection of safe, effective equipment; the maintenance of this equipment; the inspection of buildings for hazardous conditions, and the training and education of all campus personnel to recognize fire hazards and to use fire extinguishing equipment efficiently. In my opinion, these activities have equal importance.

SELECTION OF EQUIPMENT

In selecting equipment the best policy is to pick equipment that has the approval and label of one of the professional testing agencies. The best known are probably the Underwriters' Laboratories and the Factory Mutual Laboratories. The former tests especially for stock fire insurance companies. Equipment with UL approval bears its label showing for what purpose and to what degree the equipment is considered safe and effective.

The Factory Mutual Laboratories stamps the initials FM, usually enclosed in a diamond-shaped outline, on the manufacturer's label to indicate approval. The conditions under which it has found the equipment effective and safe are described in pamphlets and bulletins, which are supplied free to companies insured with one of the members of the laboratories' association.

The Underwriters' Laboratories' labels on fire extinguishers indicate by the letter A, B or C the type or types of fires on which each extinguisher is effective and by Arabic numerals the number needed to make a fire fighting unit. Fires that can be effectively extinguished by cooling are Class A; those in which a blanketing and smothering effect is essential are Class B, and fires in electrical equipment where a "non-conducting" extinguishing agent should be used are Class C.

The best cooling agent for fire extinguishing is water. It extinguishes fires by lowering the temperature of the burning material below the ig-

niton point and is highly effective on fires in ordinary combustible materials, such as wood, paper, fabrics and rubbish.

Large and small hose streams, automatic sprinkler systems, pails of water, pump tanks, and the chemical or soda-acid fire extinguishers all use the cooling effect of water in fighting fire. However, except in a fine spray it is not effective on fires in flammable liquids (except alcohol) and greases.

SMOTHERING AGENTS

The smothering agents used to extinguish fires, especially in flammable liquids and greases, are: foam, which forms a light, flexible but stable blanket of bubbles excluding air; vaporizing liquid (carbon tetrachloride), which forms a blanket of heavy inert gas; carbon dioxide, which replaces or dilutes the oxygen in the air below the amount required to support flame, and powdered materials, which exclude air.

Fire caused by electricity is in a class by itself because of the danger of fire fighters being electrocuted. Water and foam are dangerous here because they are excellent conductors of electricity. Carbon tetrachloride, carbon dioxide, and powder are not. Water in the form of spray cannot conduct electric current.

Such fires are started by electric arcs, sparks or by overheating of electric conductors. If the ignition source can be eliminated by the cutting off of the electric current, the fire becomes Class A or Class B. For instance, if overheating of an electric cable causes a fire in a wooden partition, water would be the best extinguishing agent. Normally, the electricity should be cut off first.

Proper use of electric equipment would virtually eliminate fires caused

by electricity. The testing laboratories examine and test electric devices and materials to make sure they have been properly constructed and will not accidentally arc, spark or overheat. Such devices are labeled and are listed in pamphlets published by the laboratories. We should insist that all electrical equipment we use has been tested and approved.

Fortunate is the institution that can afford to have and maintain its own fire department. Such a department greatly increases the fire fighting facilities in a community, and its personnel can do most of the fire prevention work, too. However, unless an institution can afford a well manned and well equipped department, a more practical arrangement would be to depend on the local community. The original outlay for this equipment is tremendous; it soon becomes obsolete, and it creates another pay roll.

Automatic sprinkler systems are the most important means of preventing fire loss. They discover the fire in its early stages, give the alarm, and pour water on the fire as long as the water supply lasts. All sprinkler systems should be planned and installed with the advice of experts. The size of piping, the number and location of heads, the temperature at which heads will fuse, all influence their effectiveness in reducing fire loss. Today sprinkler heads have been developed which use less water applied as a fine spray or flooding.

MAINTENANCE OF EQUIPMENT

The second important phase of a fire protection program is the maintenance of equipment. This includes, first of all, electrical wiring, motors, controls and appliances; second, fire extinguishing apparatus and alarms, and third, miscellaneous items, such as the flameproofing of stage curtains and the operation of automatic fire doors.

The first safety device of any electrical installation is the fuse box. In spite of the highly trained, techni-

H. H. BENSON

Director of Personnel
Cornell University

cally educated personnel found on a college campus, electrical circuits sometimes are misused by substituting fuses with too large a capacity or by bridging burned out fuses with wire.

All electrical apparatus used regularly, especially if it operates automatically from a pressure switch or thermostat, should be serviced on a regular schedule. The schedule will depend upon the load and hours of actual operation of the equipment, but it must be regular. Motors, too, need regular oiling. Hot bearings are a common source of ignition.

Fire extinguishers need regular attention. Those using carbon tetrachloride base fluid should be inspected, tested and, if need be, recharged every three months. Carbon tetrachloride fire fluid is almost completely dehydrated and therefore absorbs moisture very rapidly. Water combines with the carbon tetrachloride to form dilute hydrochloric acid, which is highly corrosive. The extinguisher then works with difficulty or not at all. Carbon tetrachloride also evaporates quickly, so all valves must be tight.

The soda-acid extinguishers should be discharged by actual operation and then recharged with a new solution of soda and water at least once a year. Parts of these extinguishers seldom get out of order, and we have found extinguishers which had not been recharged in ten years but still operated effectively. On the other hand, and in spite of regular attention, we always find a number of these extinguishers inoperative when they are inspected and tested.

Carbon dioxide extinguishers require the least maintenance. So long as the carbon dioxide charge does not leak out and is not used, they do not need to be recharged. Maintenance consists of periodically weighing each extinguisher, a simple process. Maintenance of powder extinguishers consists of checking the quantity of powder and weighing the small carbon dioxide cylinder which is the expelling agent.

Fire alarms and sprinkler systems should be inspected and tested on a regular, frequent schedule. We like to do it once a week. Both systems are valuable and effective means of preventing loss resulting from fires. Like any automatic equipment which is used infrequently, they can get out of order without discovery. Like all fire apparatus, they are no good unless they work.

An important part of maintenance is making sure that fire doors are not blocked and that fire escapes are not only available but accessible. We have found fire escapes so installed that no one could possibly have used them. We have found automatic fire doors securely fastened open. Many older buildings have open stairways which should be enclosed at each floor, especially if there ever are many persons above the second floor.

INSPECTION OF PLANT

The third phase of any fire protection program is regular inspection of the college plant for conditions that might contribute to fires. The most economical method of preventing fire loss is to prevent fires. An inspector will find that a check list of things to look for will be helpful, but as he becomes experienced he will habitually see questionable practices and hazards. Generally, these hazards are obvious, but the personnel in the area becomes accustomed to or is so familiar with the process and equipment that it does not realize the dangers. It also procrastinates on repairs and adjustments.

A common cause of fire is poor housekeeping. A dropped cigaret, an electric arc, or a hot bearing will not start a fire unless something is there to burn. Just plain dust is all that is needed.

Cracks between the floor and baseboards, under stair risers, and under closet doors will allow a dropped cigaret to roll out of sight and still burn. Oily rags left by painters and janitors may ignite from spontaneous combustion if not disposed of in tight containers or hung up to air.

Electric light bulbs and sometimes radiators and steam pipes against combustibles have been known to start fires. Oily dust mops, which were not hung so the entire mops could cool in the atmosphere, have ignited from spontaneous combustion. Sparks from welding and especially from oxyacetylene and electric cutting torches fly into unexpected places and start fires. Hot ashes in combustible containers or piled against a wooden wall are hazardous.

Ducts and flues over kitchen ranges accumulate grease from the cooking fats which, unless regularly removed, will eventually ignite. These fires usually are difficult to get at with fire extinguishing equipment and can do considerable damage. Nitrate film will

ignite without any visible source of ignition, simply from its own decomposition, unless properly stored. Better still, use safety film.

Next to preventing fires, an important way to reduce fire loss is to discover fire in its early stages. The quickest method is with automatic fire alarms and with sprinkler systems. A necessary supplement to these is adequate patrol or watchman service. We would like to have every building on our campus visited every hour from 6 p.m. to 6 a.m. There are invariably staff members in the buildings until 6 p.m. and later, and our janitors start work at 6 a.m.

TRAINING

The fourth phase of an effective fire protection program is training all campus personnel to be fire prevention minded. Supervisory employes should understand and recognize the typical fire hazards in their areas. All employes and key students should be familiar with the fire extinguishers they might have occasion to use, with the system of fire alarms in their particular buildings, and with the operation of automatic sprinkler systems.

It is particularly important that janitors and maids be aware of typical fire hazards and are familiar with the alarm and extinguishing equipment on which they depend. These people can do more toward reducing fires than any other group because they usually are on hand. The maintenance mechanics form another special group that should be trained to be aware of the hazards peculiar to their trades and to be familiar with extinguishers and their operation.

The modern college campus includes all kinds of fire hazards. Automatic electrical equipment, seldom seen gas and oil fired burners, motors that are started and stopped by automatic electrical switches, research projects where flammable materials and several types of ignition are always present, stores of extremely flammable minerals, cylinders of compressed and highly flammable gases, careless smokers, old buildings inadequately adapted to modern use, expansion of plants beyond present emergency water supplies are all factors which make the fire prevention program of a college extremely complicated. However, a program of careful selection and maintenance of equipment, thorough inspection of premises, and training of personnel will do much to keep losses down.

The director of FOOD SERVICE has a job
constantly growing in prestige. This article tells what
the position requires and how a person trains for it

A SHORT TIME AGO I WAS ASKED BY the business manager of a large university to assist him in obtaining the services of a food service director. He wanted someone who could step in and take over a big job. He knew in general the qualifications of a good executive, but, specifically, he did not know the functions of this particular position.

It has been my experience that few administrative officers in institutions thoroughly understand the true functions of this important position. In some institutions the food service director performs functions other than those concerned directly with the food department, but this article deals only with his food service duties.

The function of the food service director is to staff, equip and operate the dining facilities of an institution in accordance with established objectives and standards.

The following directive for the manager of the dining halls on the men's campus of Duke University has been very effective. While every institution has its own problems peculiar to its specific operation, the general theory might be adaptable to other food service departments.

PROCEDURE GUIDE

The manager of the men's dining halls is responsible for the operation of the dining halls in the west campus union. These are as follows: cafeterias A, B and D; C hall tray service, the Oak room, and banquet rooms. He reports to the manager of dining hall operations. He has line authority over all phases of the operation.

At the request of the manager of dining hall operations, or in his absence or during his inability to act, the manager of the men's dining halls will perform the duties and exercise the authority of the manager of dining hall operations. His responsibilities will

THEODORE W. MINAH

Director of Dining Halls
Duke University

necessitate his becoming familiar with the dining hall operations of the woman's college.

The manager of the men's dining halls will carry out the policies of the manager of dining hall operations and will maintain standards of food preparation, service and cleanliness that shall be a credit to the university. He shall conduct the business in accordance with the highest standards and shall operate the dining halls as a service to the students, faculty and guests of the university. His mission is to serve the best quality of food at as low a price as possible without incurring a deficit to the university.

DUTIES AND RESPONSIBILITIES

In addition to such other duties as may be assigned to him by the manager of dining hall operations, his specific responsibilities and authority include the following:

1. Develop and recommend to the manager of dining hall operations all policies relating to the operation of the men's dining halls.
2. Cooperate with the purchasing agent in preparing purchase orders for dry provisions (indirect storeroom purchases) for both the men's and woman's college dining hall operations.
3. Supervise the selection of, preparation of orders for, and procurement of direct purchase items by the storeroom manager and the head butcher.
4. Supervise the receipt, storage and issue of food and supplies to ensure a minimum of loss from spoilage and theft. He carries out the food control system set up by the manager of dining hall operations.
5. Supervise the menu planning

and food preparation as well as the service and selling of food in all cafeterias, dining rooms, and social functions of the west campus. These duties are carried out in accordance with the policies set up by the manager of dining hall operations.

6. Cooperate with the personnel manager in the procurement, hiring and training of personnel.

7. Supervise the preparation of the daily reports of the operation of the men's dining halls and approve all vouchers sent to the treasurer's office after verifying their accuracy.

8. Directly supervise the storeroom supervisor, the food production supervisor, the selling and service supervisor, the housekeeping and personnel supervisor, and office and clerical staff.

In carrying out his duties, the manager of the dining halls must possess a detailed knowledge of many fields.

Procurement and Receipt of Food, Supplies, Service and Equipment. In this function, the director must have extensive experience in the purchasing of hundreds of different items. It is in this job that he establishes and follows the policies that concern quality standards. His decisions in purchasing may be disastrous if he buys at the wrong end of a price fluctuation.

Storage and Issue of Food and Supplies. The director must be able to keep adequate supplies of items on hand or within easy reach. At the same time he must keep these supplies constantly turning over and must be ready to take advantage of breaks in the prices of commodities. His knowledge of storage of perishable items is useful, especially where large quantities of these items have to be procured at one time.

Planning Menus or Diets. Consideration here is given principally to the actual function of the institution as far as diets are concerned. In carrying out this function, the many and

exacting duties of good menu planning are followed.

Preparation of Food. Although the director is seldom called upon to do the actual cooking or food preparation, I have yet to find a good one who doesn't know this phase thoroughly. The kitchen employees can be trained to be good cooks only when their supervisors know how to cook.

Service of Food. Food service in institutions may vary from that in a hospital where a patient is served individually to the service in large dining halls where hundreds are served at the same time. Every type of food service in use at the present time may be found in institutions.

Hiring, Training, Supervision and Dismissal of Personnel. This function involves a thorough knowledge of personnel management.

Housekeeping. Since institutions are called upon to maintain the highest standards of cleanliness, this function becomes one of the most exacting. This includes the cleaning of all areas in which food is handled or served; the cleaning of equipment and utensils; hygiene and sanitation of employees and areas, and care of equipment and supplies.

Accounting. This includes food cost and control and interpretation of financial statements. In this connection there was an excellent article in the November issue of *COLLEGE AND UNIVERSITY BUSINESS* entitled "Improving Food Service Management." Ted Rehder, director of dormitories and dining services at the State University of Iowa, in this article emphasized the important part this phase of the operation played in good food management.

Promotion and Public Relations. The function of a food service director involves something besides preparing food and putting it before the student. He must be able to promote the sale of these meals. He must be keenly aware of all tricks of good merchandising if he expects the student to come back day after day and continue to like his food. He should take an active interest in the affairs of the institution and become a part of its life.

TRAINING DIRECTORS

The dining halls of an institution are a complex organization; their operation calls for a wide range of skills, for the use of a variety of products in a large number of processes. A curriculum adequate to prepare one for

the direction of those operations, and for the provision of those services and equipments, must draw upon nearly every branch of human knowledge. As a consequence, the food service director studies drawing, physics, bacteriology, sanitation, chemistry, biology, engineering, vegetable and fruit crops, meat products, dietetics, food preparation, textiles, decoration, law, psychology, personnel management, advertising and public speaking, all in addition to the subjects ordinarily studied in preparation for business management.

Additional subjects should be studied to provide an adequate cultural background that will assist the person in living a richer and more useful life.

The higher education should be of at least four years' duration and should lead to a B.S. degree in institutional management or hotel and restaurant management. There are some excellent institutional management departments in colleges and universities throughout



the country. In the past few years several of the leading institutions of higher learning have installed two to four year courses in hotel and restaurant management. The course in hotel administration at Cornell University was the first of its kind and probably offers the widest selection of courses in restaurant management.

Higher education alone is not a panacea in the foods business. There must be a thorough background of practical experience which carries on through the entire career. Many large institutions and restaurant chains give a course in practical training to prospective managers. The time spent learning any one phase of the work varies with the individual. Normally, I would say a college trained person should expect to have at least three years of this type of experience before taking over a job alone.

This training course usually begins with about a six months' internship in the storeroom. Here, the trainee gets the picture on how to buy food, receive and store it. This is important at this point because on this job he becomes familiar with the raw product, the sources of supply, costs and prob-

lems concerning the handling of food. He should have at least six months on this job.

The next step in practical experience should be spent at the service station, in the dining room, on the counter, or at the location where the food is served to the guest. He should spend enough time on each of these jobs to learn the service angle. He should acquire the point of view of the guest and be ready and willing to anticipate his needs. Six months should be enough to acquaint the trainee with some of the problems. At this point he is ready for the kitchen. No one expects to become a full-fledged cook in six months, but with an academic foods background he should be able to grasp something of the intricate details concerned in the preparation of food. At any rate, in six months he should have acquired a healthy respect for a good cook.

The next step is to the steward's office, where he learns to make menus. Here is the heart of the whole organization. The person making the menus sets up the picture of the entire organization. He determines the type of meal served, the ingredients, cost and even the color combination of the food. He can't learn this job thoroughly in six months but should have acquired enough of the mechanics of menu making to start an operation on his own.

His experience in personnel and housekeeping will be obtained pretty much as he goes from one step to another. This responsibility is present in every phase of the operation.

The final step in training should be in the accounting office. This is the most important of all from the standpoint of management. Without a clear knowledge of cost control and analysis, the food director might as well be driving a high powered car down a highway at night with his lights turned off. A six months' training period for this phase is inadequate. Some of the best men in the field are still learning and have a long way to go.

All this education and training must be approached with the same focusing interest: How does this material relate to restaurant operation?

The position of food service director is constantly gaining in prestige and importance. Those of us who are in this field of endeavor are proud of our positions and the opportunity we have to enrich the life of the institutions and thus to serve our society.

Looking Forward

Without Federal Control?

MANY PROTAGONISTS FOR FEDERAL AID TO EDUCATION assume that it is possible to receive and to spend funds from the federal treasury without control entering into the picture. This is a false assumption, to which administrators from institutions with government research contracts can readily testify.

The Supreme Court has already stated that it is natural and lawful for the federal government to supervise that which it subsidizes. Recently, the president of Columbia University, Gen. Dwight D. Eisenhower, was quoted as follows: "The federal government has no right to take tax money out of our pockets and then give it back to us without some form of supervision." And yet there are many who glibly express no fear of control as they campaign for federal funds.

As far back as 1921 the late Nicholas Murray Butler expressed his concern regarding federal regulation in his annual report to the trustees of Columbia University: "A school system that grows naturally in response to the needs and ambitions of a hundred thousand different localities will be a better school system than any which can be imposed upon those localities by the aid of grants of public money from the federal treasury, accompanied by federal regulations, federal inspections, federal reports, and federal uniformities."

Interest in receiving federal aid may have been based in part on the assumption that private gifts and corporation support of education are declining. The actual figures, however, show that private philanthropy in support of education was greater last year than in any previous year.

Obviously, there is no easy solution to the financial problems of higher education. But it is questionable how long colleges may maintain their independence once they become beneficiaries of a government hand-out. Which is better: to forfeit independence for security or to take the risks involved in being independent?

Intelligent Planning

IN CONSIDERING FUTURE PLANS FOR THE EXPANSION of Cleveland College, Western Reserve University's downtown institution, a fine program of research is being conducted. It augurs well for the future effectiveness of the college. As a basis for sound planning the administration considers it essential to assemble and to interpret a wide variety of data.

Some of the questions being studied include the following: (1) Are the facilities for higher education in

Greater Cleveland adequate to the needs and demands of the city's growth? (2) What are the trends in college enrollment, not only of recent high school graduates but of adults also? (3) What percentage of Greater Cleveland's potential college population will remain in this area for college and graduate study? (4) What influence will the decline in veteran enrollment have on college and university enrollment, income and teaching staff? (5) What are the educational needs of the community which Western Reserve University is best fitted to serve either at present or by further expansion of its curriculum? (6) What are the occupational trends and demands in the community? What fields of employment are likely to need trained men and women? What fields are overcrowded?

President Leutner, in discussing this new project, stated, "Since the demands on the supporting public are so numerous, they should be based on need and service rather than on institutional pride. Before any institution engages in a building program, it must be clear that its educational program reflects community needs."

Fire!

WITHIN THE LAST THIRTY DAYS, FOUR AMERICAN colleges have experienced disastrous fires—with terrible loss of life and with heavy property damage.

Look at the record: Kenyon College with nine students dead and \$500,000 property loss in a residence hall fire; Baker University with a sorority house fire; State Teachers College at Farmville, Va., with a \$300,000 loss in an auditorium building fire; University of North Dakota with a school of education building destroyed that will cost \$500,000 to replace.

"It can't happen here" seems to be the attitude of some officials when fire prevention technics are discussed. It's a sad commentary on administrative operations that it takes a disaster to jar some of us awake.

To cap the climax, reports have come to this publication that some institutions lock the doors of women's residence halls at night—with no emergency fire escapes available. What better invitation to disaster in case fire breaks out!

What to do?

Regular inspection of all buildings will aid a great deal in reducing fire risk. Special attention should be directed toward maintaining high housekeeping standards as a well kept building is much less likely to be the scene of a fire. Make certain that alarm devices and extinguishers are in good working condition. In addition, train staff and students so that proper safety technics are observed.

Questions and Answers

Residence Hall Problems

Questions: 1. Do most colleges replace residence hall furniture as warranted, or do they follow the policy of major expenditures every five or ten years? Regardless of replacement method, what percentage is set aside each year in their budgets? Is it a percentage based on inventory value, quantity or some other method? On what basis do schools set aside sums for repairs to furniture?

2. Do most colleges buy more than one size of bed for residence halls, or does the tall man occupy the conventional length of bed?

3. What type of mattress is best suited to residence hall requirements?

4. Are dormitories usually charged a pro-rata share of utilities? If so, on what basis?

5. Our shower rooms have painted plaster walls. Paint lasts only a short time owing to the steam, and now the plaster is giving away. Do you know of a substitute for tile? —P.J.M., Neb.

ANSWERS: 1. *Replacement of Furniture.* For several years we have carried a predetermined amount in our annual budget for repairs and replacement. Up until the present this has been adequate, but we are now faced with higher costs and are therefore doubling the amount. Whenever a new unit is opened, the cost of equipment is amortized over a period of ten years, and 10 per cent of the cost is put into the budget as an amortization figure. Naturally, much of this equipment will last more than ten years, so on an over-all basis the amount is adequate. Repairs come out of the yearly operating budget unless there is some large unforeseen amount, and this is then taken out of reserve.

2. *Bed Sizes.* For our new residence hall approximately 10 per cent of the beds ordered will be extra size. Our normal bed size is 39 by 78 inches; this accommodates most students. The longer beds will be 7 feet.

3. *Mattresses.* Beds in our permanent residence halls are provided with inner-spring mattresses. However, our new dormitory will probably have foam rubber mattresses as the beds will be used for daytime lounging. I only hope that the cost of the foam rubber will fit into our budget for furnishings in this new building. The size of our inner-spring mattresses is 3 feet by 6 feet 4 inches.

4. *Utilities.* The cost of utilities varies greatly from one institution to another. Most of our individual units are specifically metered for light and heat and, of course, gas for cooking in the feeding units. In addition to the actual cost of the utilities, we also pay the buildings and grounds department a percentage for its overhead. Our campus is built in the quadrangle system, and fraternities and sororities also obtain utilities from a central plant, which results in a bulk saving on a meter basis.

5. *Plaster Walls in Shower Rooms.* Proper ventilation seems to be the only answer if a good grade of wall covering has been used. The University of Wisconsin in its newest residence hall has installed marble in place of tile in toilet and shower rooms; this does away with plaster patching, except for the ceiling areas. —WILLARD J. BUNTAIN, *director of dormitories, Northwestern University.*

Giving to Hospital Fund

Question: Should a college give to a local hospital capital fund campaign in order to receive adequate hospital service? —W.W., N.H.

ANSWER: The legal right of a college (whether it is privately endowed or publicly supported) to contribute to the capital fund of a local hospital is questionable, unless funds are available for this specific purpose. If a college is to rely upon a local hospital to serve its students, a contract may

If you have a question on business or departmental administration that you would like to have answered, send your query to COLLEGE and UNIVERSITY BUSINESS, 919 North Michigan Avenue, Chicago 11, Ill. Questions will be forwarded to leaders in appropriate college and university fields for authoritative replies. Answers will be published in forthcoming issues. No answers will be handled through correspondence.

properly be made guaranteeing the hospital, upon its completion, certain current income for a specified term of years.—RALPH J. WATTS, *business manager, Lawrence College.*

Plaster Failures Costly

Question: How can we reduce the costly repair of plaster walls where there have been cases of plaster failure?—H.N., Okla.

ANSWER: Manufacturers are now producing a lime that helps to eliminate costly plaster failures, the National Bureau of Standards announced recently.

Research at the Bureau of Standards has revealed that plaster failure of the blister type, costing many millions of dollars a year, is caused by the expansion of one of the components of the lime used in preparing the white coat of plaster.

If failure is to be avoided in plasters, no disruptive change in volume can occur once setting has taken place. The Bureau of Standards discovered that volume expansion, however, does occur, resulting in bulging, blistering and buckling in the white coat. This expansion results from the gradual combination of water with one component (unhydrated magnesia) of the lime used in preparation of the white coat. Such water absorption takes place slowly, and most failures occur several years after the white coat is applied.

Following this discovery, federal experts undertook research to develop a method for treating lime so that such expansion would become impossible. The method involves the use of a large autoclave in which heat and moisture are used to effect a chemical bonding of water with the components of the lime. The resulting compound is stable with respect to water.

The results pointed the way to commercial application of the method and manufacturers are now producing a dolomitic lime, one with the magnesia so well hydrated that harmful expansion does not take place.—E. U. CONDON, *National Bureau of Standards, Washington, D.C.*

NEWS

Discrimination Against Jewish Students in Some Colleges . . . Quits Race for Queens College Presidency . . . Commissioner of Education Declares Himself for Federal Aid . . . Charges V.A. Education Program Too Complicated

Washington Correspondent: BEN BRODINSKY

Study Reveals Some Colleges Discriminate Against Jewish Students

WASHINGTON, D.C.—“A certain amount of discrimination against Jewish students applying to certain types of colleges in a particular part of the country is a demonstrated fact,” says the American Council on Education in a study released last month.

The study, undertaken to find the factors in admission or rejection of college applicants, was made by Elmo Roper, public opinion analyst, and was financed by the Anti-Defamation League and the Vocational Service Bureau of B'nai B'rith.

Results are based on interviews with 15,000 high school seniors of 255 high schools during the spring of 1948 to determine whether they hoped to go to college. A follow-up in October sought to determine whether they had been admitted.

Of the total number of students applying for admission to college, 87 per cent of the Jewish students who applied were admitted to some college, 88 per cent of the Protestant students, and 81 per cent of the Catholics. Only 14 per cent of all applicants failed to get into some institution of higher education; the others did not necessarily get into that of their first choice.

But while Jews “ultimately succeed in getting a chance at some kind of college education as often as Protestants do,” the report points out they must try more colleges in order to do it.

The report says: “Jews are a definitely disadvantaged group when it comes to getting into college, but the situation is complex. In the first place, a much larger proportion of Jewish high school seniors apply to college than do Protestants or Catholics, and the Jewish applicants are heavily con-

centrated in the Northeast. The pressure of Jews in this area on college admissions committees is still further enhanced because each Jewish applicant applies, on the average, to more different colleges than does the Gentile.

“Such discrimination as exists does not absolutely deny the Jewish student a college education or prevent Jews from getting a more than proportionate share of the places in freshmen classes based on the numbers from the three religious groups who apply. What does happen is that the Jewish student has to try more colleges in order to get into one, and he sometimes has to be content with becoming a freshman in a city college instead of going to an institution farther away that he may think gives better schooling or has more prestige.”

Dr. Hovde Quits Race for College Presidency

NEW YORK CITY. — Dr. Bryn Hovde, president of the New School for Social Research, recently asked that his name be withdrawn as candidate for the presidency of Queens College.

Approximately a month ago the entering of his name for consideration as a candidate caused Mayor O'Dwyer of New York City to “intervene” in the case by a rebuke to the board of higher education on February 17 for its expected choice of Dr. Hovde as the new Queens College president.

Dr. Hovde referred to the fact that on March 10 Mayor O'Dwyer issued a “magnanimous statement retracting every intention to limit the independence of the board of higher education and that, in view of the mayor's statement, ‘I feel that the interests of all concerned will be best served if I step out of the picture.’”

Seek Troop Ships in Summer Travel Plan for Students

WASHINGTON, D.C.—As many as 7500 students and professors will be able to go to Europe this summer for as little as \$250 round trip, if Congress approves a plan developed by a bipartisan group of senators for the use of reserve maritime commission troop ships.

Sen. Ralph E. Flanders (R-Vt.), speaking for the group of sponsors, stated that many thousands of Americans were apparently blocked from going to Europe this summer because of the extreme shortage of transportation. All regular surface transportation has been booked to capacity for a number of weeks. “We are alarmed that the policy of encouraging educational travel as set forth in the Smith-Mundt Act was to be frustrated. Therefore, we worked out with various agencies of the government a plan partly to meet the need.”

Other sponsors include Senators J. William Fulbright (D-Ark.), Francis J. Myers (D-Pa.), Paul H. Douglas (D-Ill.), Charles W. Tobey (R-N.H.), H. Alexander Smith (R-N.J.), and Karl E. Mundt (R-S.D.).

The program, set forth in S.R. 83 which the senators introduced, requests the President to “provide accommodations at reasonable rates . . . for students and other persons traveling for educational or cultural purposes.”

The ships that would be used are C-4 type of troop ships. The first sailing of students would be on June 4 from New York to channel ports.

The travel plan, developed with the Council on Student Travel and the Institute of International Education, would be administered by the cultural affairs division of the State Department.

New Commissioner of Education Takes Stand on Federal Aid

WASHINGTON, D.C.—Upon his induction as U.S. Commissioner of Education on March 18, Dr. Earl J. McGrath declared for "higher education for every boy and girl to the full extent that they can profit by it, at public expense if they can't afford it themselves."

The oath of office was administered by Associate Justice Wiley Rutledge of the Supreme Court before a group of several hundred persons, representing education, government, labor and business.

In his induction statement, Dr. McGrath deplored the "social waste involved when capable young people are deprived of higher education because of lack of money."

"A democratic nation needs to develop its human resources no less than its natural resources. This is chiefly the task of the schools. But if they are to discharge their responsibilities fully the states must be helped financially by the federal government."

"Some will say that federal aid will lead to federal domination and result in federal control of the thinking of our citizens. I deny this. The tradition of local control of education is firmly established in America. I have no fear that the people of the land would ever let it be destroyed."

Dr. McGrath also said that he does not believe the U.S. Office of Education should be an independent agency. It should remain part of the Federal Security Agency, he said, "since education and welfare share a common area."

Educational Exchange Lacks Money to Function

WASHINGTON, D.C.—Our so-called "worldwide information and educational exchange act" is not functioning because of lack of money.

So reported the advisory commission on educational exchange which guides the State Department in administering the Smith-Mundt Act. The advisory commission is headed by Dr. Harvie Branscomb, chancellor of Vanderbilt University.

This act is now one year old, the commission reported to Congress, but

not a single dollar has yet been appropriated to carry out activities intended by the law. A limited number of educational exchanges have been financed with funds appropriated for regular State Department cultural activities with Latin America.

However, "no government supported educational exchange activities are yet being conducted under the Smith-Mundt Act in the Eastern Hemisphere," the commission said. The Eastern Hemisphere is the State Department name for all the world's countries outside this continent.

The advisory commission called upon Congress to provide funds for 1950 so as to make the educational exchange program meaningful.

Vassar College Welcomes Negroes

POUGHKEEPSIE, N.Y.—Sarah Gibson Blandings, president of Vassar College, severely criticized discrimination in the admissions policies of some colleges and said in her annual report that "we rejoice that at Vassar our admissions system makes no distinction as to race, creed or color."

"There has been much in the press of late concerning equal opportunities for Negro students, and I should like to take this opportunity to say that Vassar would welcome more applications from well qualified Negroes."

Miss Blandings continued in her report by stating, "I believe the small privately endowed liberal arts college will continue as long as it provides an education which has meaning for contemporary life."

Mansion Rent-Free for School of Social Work

NEW YORK CITY.—The Carnegie Corporation of New York recently announced that the sixty-six room Andrew Carnegie home at 2 East Ninety-First Street, largest private residence remaining in the city, has been turned over to the New York School of Social Work of Columbia University.

The mansion has been conveyed by the Carnegie Corporation to the university on a twenty-one year lease, at no rental, with an option for renewal. It is reported that few structural changes will be made in the old mansion. The main kitchen will become a cafeteria and the art gallery will be converted into a lecture hall.

V.A. Education Program Too Complicated, Says Hoover Commission

WASHINGTON, D.C. — Improvements in veterans' education and rehabilitation programs were recommended by the Hoover Commission on Organization of the Executive Branch in a special report, "Veterans Affairs."

The trouble with veterans' education, the Hoover Commission said, as with all other veterans' affairs, is that it has grown too complicated. "There is an excess of voluminous written instructions on methods and procedures which defy intelligent execution. There are eighty-eight manuals, 665 varieties of technical bulletins, and more than 400 circulars," the commission said.

Pointing to education and rehabilitation programs, the Hoover Commission said:

1. The federal government has insufficient control over the quality or the utility of the training provided veterans in many schools.

2. In some instances the federal government pays the highest possible tuition and equipment charges to schools where such charges are difficult—if not impossible—to justify.

3. The Veterans Administration has been slow to recognize problems as they emerged. Only after a long period of time did it recommend even a partial elimination of avocational and recreational courses. The administration also has been slow in urging the enactment of standards for on-the-job training. And only at a late date did it decide that the so-called "institutional on-farm" training program had developed on an unsound basis.

As one step for correcting deficiencies, the commission says:

"We recommend that the Veterans Administration be given authority to establish a system of certification for all educational institutions that are not 'accredited institutions' in that they have not been approved by recognized accrediting organizations or by the appropriate state department of education; and that no payments be made to any institution, or student of it, which has failed to receive this certification."

The American Council on Education opposes this policy.

400 Delegates Attend First National Congress of Private Schools

WASHINGTON, D.C.—The place of the private educational institution in American life was hailed by congressional, government and business leaders addressing the first national congress of private schools in Washington on March 18 and 19.

Some 400 delegates from all parts of the country were present. They represented state and regional associations of trade, commercial and technical private schools.

Maj. Gen. K. P. McNaughton of the U.S. Air Force paid tribute to the work of privately supported aviation schools. He revealed that the air force is studying "existing and potential capabilities of private schools in planning for any emergency expansion of the air force."

Rep. W. M. Wheeler (D.-Ga.) said that the private school leads the student to a full realization that he is an individual who does not have to rely on the beneficence of paternalistic government. "The private school relieves the individual from the necessity of adhering to a prescribed norm," Mr. Wheeler said. "It gives the pupils the widest possible range of choice of an education."

Business sessions of the congress aired grievances of private school operators against the Veterans Administration. Delegates complained V.A. owes their schools large amounts in back tuition because of disagreement over the federal agency's rate-fixing power. Spokesmen for the congress urged delegates to fight a bill, now in the House veterans affairs committee, which, it was charged, would give V.A. control over the schools through the government's "power of the purse."

The controversial bill (H.R. 121) would grant V.A. authority to set "reasonable and fair" tuition rates to be paid to schools which have been organized since June 22, 1944, or which have raised their charges since that date. The House committee has not yet taken action on it.

In turn, delegates were urged to support two other bills. A measure by Rep. Morrison (H.R. 1966) would give state agencies the final say in tuition disputes through the medium of public hearings before state depart-

ments of education. Rep. Wheeler's bill (H.R. 3264) provides that V.A. reimburse the state and local school agencies for their expenses in such hearings.

The congress of private schools was sponsored by the National Federation of Private School Associations, Washington, D.C. Its executive director is Dr. J. S. Noffsinger. The federation includes forty national and state associations representing 6000 nontax-supported technological schools, Dr. Noffsinger said.

Calls Offer to Sell Name a Misinterpretation

CAMDEN, N.J.—Arthur E. Armitage, president of the College of South Jersey, is reported to have stated that the college might consider a change in name if some wealthy person wanted to make a generous endowment.

President Armitage declared later that his first proposal was misinterpreted by the New York newspapers which had indicated that "for a million dollar endowment the South Jersey institution offers to call itself anything." He did point out the case where a college had changed its name as the result of a substantial gift, the example being the case where Trinity College changed its name to Duke University when the money from the Duke tobacco interests was made available to the institution.

FOOD SERVICE INSTITUTE

By popular demand of last year's delegates, Northwestern University and College and University Business are jointly sponsoring the 1949 College Food Service Institute. Sessions will be devoted to study of food costs, personnel administration, equipment maintenance, and other food service problems.

Date: July 25 to 27

Place: Knickerbocker Hotel, Chicago

Fee: \$15

Checks should be made payable to "Food Service Institute," and mailed to Willard Buntain, director of residence halls, Northwestern University, Evanston, Ill. Do not make checks payable to Mr. Buntain, Northwestern University, or College and University Business.

Limit of two delegates from any college or university. Total registration restricted to 125 persons; first come, first accepted.

Bills Affecting Higher Education Before Congress

WASHINGTON, D.C.—Legislation affecting schools and colleges will be taken up in earnest as soon as the Taft-Hartley and veterans' pension bills are out of the way, congressional leaders promise.

In the meantime, highlights of activities in Congress include:

The Senate passed S. 247, to establish a national science foundation. The bill, yet to be approved by the House, would promote research for national defense, medicine, engineering and other sciences and would create a number of fellowships and scholarships in these fields.

The Senate committee on labor and public welfare reported favorably the administration's bill for federal aid to lower schools and placed it on the calendar for Senate action. In the House, aid to education is snarled because two administration stalwarts introduced conflicting bills. A measure by Rep. Lesinski (D.-Mich.) provides aid for public and nonpublic schools alike; another bill, by Rep. Barden (D.-N.C.), restricts aid to public schools, leaving the individual states to decide whether federal funds should or should not be used for nonpublic schools.

The Senate banking committee killed an amendment to a proposed housing act under which colleges would have obtained grants and loans for construction to house students and faculties.

Among new bills introduced are proposals to:

1. Exempt from income tax the annuities received by retired personnel in public institutions. The amounts to be exempt vary from \$1440 to \$2500. More than a score of bills on this subject have been introduced.

2. Use Finland's payments on the principal or interest of its World War I debt to the United States for the education and training of Finnish students in this country and for buying American books and equipment for Finnish schools and colleges.

3. Authorize a four-year college education for children of World War II veterans who died in service.

4. Enable students planning to enter government service to serve an internship in executive departments.

Hoover Commission Favors Weak U.S. Office of Education

WASHINGTON, D.C.—The Hoover Commission on Organization of the Executive Branch of the Government does not favor a strong U.S. Office of Education administering all the governmental programs in which colleges and universities have an interest.

In its final report on education, the Hoover Commission noted that nine different departments and agencies make grants or enter into contracts for research through colleges and universities. Beginning years ago with payments for agricultural research, the government is now spending huge sums in grants to higher education institutions for atomic, military and medical research, and other purposes.

"These grants have an important effect on the educational system," the Hoover Commission said. "There are those who believe that these various educational programs should be concentrated in the Office of Education."

"This commission believes, however, that these educational programs must be administered by the agencies whose functions the particular programs serve to promote."

The commission urged that the Office of Education continue its historic functions:

1. To collect data on the condition and progress of education and to serve as a source of general information on the subject.
2. To administer certain operating functions vested in that agency by the Congress.
3. To render professional advice and service to other federal agencies.

200 Avoid Rent Hike by Making Own Beds

PRINCETON, N.J. — Students at Princeton University have proposed to the administration that present rates for the twenty-two residence halls be maintained on the basis that the students will make their own beds and keep their rooms tidy. Corridors and lavatories will continue to be maintained by the university.

According to an announcement by George A. Brakely, vice president and treasurer, a 10 per cent increase in the rent in residence halls had been proposed for next year. In view of

the proposal by the students, three residence halls have been designated for the self-service experiment. It will affect about 200 students.

Princeton has made no adjustment in residence hall rent since 1937, but since that time the wages have increased 70 per cent and the costs of supplies, 100 per cent.

College Charged With Selling War Surplus

SOUTH ORANGE, N.J.—An investigation is under way by the Federal Works Agency on a charge that Seton Hall College has resold war surplus material given the college for equipment and for building facilities for education of veterans. The value of the free material which Seton Hall College received from F.W.A. was estimated to be \$770,000.

Counsel for Seton Hall, Frederick J. Gassert, stated a misunderstanding of the conditions of receipt of war surplus materials was the probable reason the college had resold the donated surplus. He added that the college would undertake to repay the government if any unwarranted profits had been made by resales.

Further investigation is pending, according to U.S. Attorney Alfred E. Modarelli.

To Minimize R.O.T.C. Problems for Colleges

WASHINGTON, D.C.—No new burdens will be placed on college administrations when the air force R.O.T.C. begins functioning as a co-equal partner with army and navy R.O.T.C. units on July 1.

Such is the assurance of the National Military Establishment. Defense officials add that they will soon release policies that will "tend to minimize" college administration problems involving contacts with multiple R.O.T.C. units.

Defense officials further say that colleges will not be called upon to provide additional facilities for the air force R.O.T.C.; that they favor joint utilization by all R.O.T.C. units of classroom and other facilities.

Among suggestions that defense officials will probably announce is that college executives appoint the senior R.O.T.C. officer or a member of the faculty to act as coordinator for multiple R.O.T.C. unit problems.

Sum of \$11,650,000 to Medical Schools for Research and Training

WASHINGTON, D.C.—Nearly one-third of federal funds approved for 1950 mental health, cancer and heart disease control activities will go for research, fellowships, teaching and training activities.

Congress approved a total of \$35,512,000 for health activities to be administered through the U.S. Public Health Service. Of this sum, \$11,650,000 will be allocated in 1950 among colleges and universities for research and training.

In approving the funds, the House appropriations committee said that it recognizes the importance of training and research grants "because an adequate supply of researchers, teachers and trained practitioners is one of the most pressing needs in medicine."

The committee indicated that Congress will support research and training programs in mental health, cancer and heart diseases for some time to come.

"Congressional financing ought to be retained for a few years," the committee said, "until the training programs are firmly established. It is often difficult to attract adequate numbers of promising scientific or medical people to take part unless they have firm commitments at the outset that funds will be available to see their research projects through to conclusion. Congress now gives them such assurance."

Decade Brings Small Junior College Increase

WASHINGTON, D.C.—Public school authorities in cities report only a 2 per cent increase in the number of junior colleges during the last decade.

In actual numbers, the number of junior colleges under public school authority in cities increased by nineteen from 1938 to 1948. The large cities of the Far West and Northwest regions were primarily responsible for the increase.

These facts were revealed in a study made by the National Education Association. Junior colleges under private control were not studied. The N.E.A. findings show that of 1452 cities taking part in the study 105 had junior colleges in 1948.

GIFTS AND BEQUESTS

- **Wilmington College** (Ohio) reported receipt of a \$125,000 bequest from the estate of the late Lida K. Johnson of Urbana, Ohio. This bequest is the largest contribution ever given to the college.
- **University of Minnesota** officials announced receipt of a gift of approximately \$500,000 for medical research from the estate of Silas McClure, Minneapolis businessman, who died recently at the age of 83.
- **Ohio State University** announced acceptance of a gift of \$11,550 from the Payne Fund of New York City toward the support of a communications project. This project will be directed by Edgar Dale of the Bureau of Educational Research at the university.
- **Moravian College**, Bethlehem, Pa., has received a gift of \$100,000 from Mr. and Mrs. Louis F. Owen of Winston-Salem, N.C. The gift will be applied toward endowing a professorship.
- **Dillard University** has received a grant of \$25,000 a year for the next five years from the National Foundation for Infantile Paralysis. The five-year grant will permit Dillard University to expand the teaching program for Negro nurses.
- **Pasadena College**, Pasadena, Calif., recently received a cash gift of \$25,000 toward the construction of a new library building. The gift was made by E. E. Anderson of Santa Monica, Calif., and of Detroit. The college is supported and controlled by the Church of the Nazarene.
- **Japan Christian University Foundation** officials have announced the launching of a campaign for \$10,000,000 to be completed by May 28, 1950. The \$10,000,000 is to be raised with the cooperation of the Mission Boards and the Protestant churches of Canada and the United States.
- **Columbia University** recently announced receipt of \$20,000 from the Alvey-Ferguson Company of Cincinnati for scholarships for students in the mechanical and electrical engineering departments of the university's school of engineering.
- **Princeton University** announces the establishment of a \$300,000 endowed professorship as a memorial to Gordon S. Rentschler, Princeton alumnus and trustee and chairman of the board of the National City Bank of New York.

NAMES IN THE NEWS

Melvin W. Hyde, dean of Mount Vernon Union College at Alliance, Ohio, has been named assistant president of Drake University. He reported to his new assignment on April 1 following a tenure of thirteen years at Mount Vernon Union College. He has been active as an examiner and as vice president of the deans' association of the North Central Association of Schools and Colleges.



J. Campbell

Frederick Coykendall, chairman of the Columbia trustees.

Dr. Robert Phillips Ludlum, vice president of Antioch College, has been named to the presidency of Blackburn College, Carlinville, Ill. He will take office June 15, when he succeeds **Dr. Robert W. McEwen**, who resigned recently to assume the presidency of Hamilton College, Clinton, N.Y.

Thomas Edward Byrne, administrative assistant with the Board of Higher Education, New York City, has been named business manager of Adelphi College. The business manager's position is a new one recently created at the college because of increased enrollment and scope of activities.

Dr. Sharvy G. Umbeck, dean of the College of William and Mary, has been appointed president of Knox College. Dr. Umbeck will take office on July 1, and at 36 years of age will be one of the youngest college presidents in the United States.

Dr. Frank Porter Graham, president of the University of North Carolina, has been appointed to the United States Senate by Gov. Kerr Scott.

Mary Churchill Small, associate director of admissions at Radcliffe College, has just been named to the new post of dean of residence. She will supervise residence hall life in the college and be responsible for administration of student government affairs.

Joseph Campbell, formerly assistant treasurer of Columbia University, has been named treasurer of the university, according to a recent announcement by



S. G. Umbeck

Robert B. Gilmore, Los Angeles accountant, has been named to the post of accounting office manager of California Institute of Technology. He was active as an army finance department officer during the war.

Paul V. Sangren, president of Western Michigan College at Kalamazoo, has been granted a leave of absence for three months to serve as an expert and adviser in the Training Demonstration School in Bavaria for the Military Government for Germany. **Wynand Wichers**, vice president of the college, will serve as acting president during Dr. Sangren's absence.



W. W. Orr

Dr. Will W. Orr, pastor of the Westminster United Presbyterian Church, Des Moines, Iowa, has been named president of Westminster College, New Wilmington, Pa. He will report to his new duties at the college on May 1.

Gen. Dwight D. Eisenhower, president of Columbia University, recently announced the creation of the post of vice president in four major fields of the university's activities. The creation of the new offices follows a survey begun nearly two years ago. **Dr. George B. Pegram**, dean of the graduate faculties, has been named vice president in charge of educational affairs. **Paul H. Davis**, now general secretary, was named vice president in charge of development. **Dr. Willard C. Rappleye**, dean of the faculty of medicine, has been named vice president in charge of medical affairs, but the position of vice president in charge of business affairs, which was also created, will not be immediately filled.

K. Richard Johnson, professor at Augustana College, has been appointed president of the National College of Education at Evanston, Ill. He succeeds **Edna Dean Baker**, who is retiring.



K. R. Johnson



B. F. Wright

Dr. Benjamin Fletcher Wright, professor of government and chairman of the committee on general education at Harvard University, has been named president of Smith College. He will be inaugurated at a special convocation next October in connection with Smith's 75th anniversary celebration. Dr. Wright will become the fifth president of the college and will succeed Herbert J. Davis, who resigned to teach at Oxford University.

Ursula Prater, formerly director of food service at Drake University, has recently accepted appointment as director of food service at Syracuse University.

Rev. John L. McNulty has been appointed president of Seton Hall College, South Orange, N.J., to succeed Msgr. James Francis Kelley, who recently resigned.

William P. Orrick of Solebury School, New Hope, Pa., is acting as headmaster during the leave of absence granted to Arthur H. Washburn, headmaster since 1927.

Evan R. Collins, dean of the college of education at Ohio University, has been named president of New York State College for Teachers at Albany. His appointment is effective July 1, when he will succeed Milton G. Nelson, who has been acting president since April 1947.

Paul H. Ballard, former member of the Ohio legislature, recently was named business manager of Ohio University at Athens. He succeeds George C. Parks, who retired after nearly forty years of service to the university. Mr. Ballard's ten years as chairman of the house finance committee are unequaled in the history of the Ohio legislature.



P. H. Ballard

John W. Gardner, executive associate of the Carnegie Corporation, was named vice president of the corporation at a recent meeting of the board of trustees. A former professor of psychology, Mr. Gardner was a member of the faculty of Connecticut College from 1938 to 1940, when he went to Mount Holyoke to teach for two years.



J. W. Gardner

Edward R. Stettinius, rector of the University of Virginia and a member of its board of visitors, recently submitted his resignation to Gov. William M. Tuck. Mr. Stettinius, former Secretary of State, has been in poor health for some months.

Dr. William F. Russell, dean of Columbia's Teachers College, has been named its president as the result of a change in relationship between Columbia University and the Corporation of Columbia Teachers College. Dr. Russell will be the third president in the history of the sixty-two year old college and the first to hold that title since 1897 when the college was made a professional school of Columbia University.

Francis C. Pray, director of public relations at Union College, Schenectady, N.Y., has been named to the newly created post of assistant to the president at Hofstra College, Long Island. Mr. Pray's appointment becomes effective July 1.

Dr. James Rowland Angell, former president of Yale University and director of the Hall of Fame for Great Americans on the campus of New York University, died recently at his home in New Haven, Conn. He was 79 years of age.



J. R. Angell

John Francis Coffee, superintendent of grounds and buildings at Lawrenceville School in New Jersey, died recently of a heart attack. He had been a member of the school staff for fifty-nine years.

Robert Zabriskie, controller of Wells College from 1920 to 1925, died recently at his home at Fort Lauderdale, Fla., where he had lived since 1939. He was 76 years old.

DIRECTORY OF ASSOCIATIONS

Association of College and University Business Officers

Central Association

President: Herbert Watkins, University of Michigan; secretary-treasurer: L. R. Lunden, University of Minnesota.

Convention: Joint meeting with Western Association, June 26-28, Denver.

Eastern Association

President: Boardman Bump, Mount Holyoke College; secretary-treasurer: Irwin K. French, Middlebury College.

Convention: December 4-6, Chalfonte-Haddon Hall, Atlantic City, N.J.

Southern Association

President: W. T. Ingram, Alabama Polytechnic Institute; secretary-treasurer: Gerald D. Henderson, Vanderbilt University.

Annual Meeting: April 29-30, Berea College, Berea, Ky.

Western Association

President: Paul A. Walgren, University of Southern California; secretary-treasurer: George A. Hall, California Institute of Technology.

Convention: Joint meeting with Central Association, June 26-28, Denver.

Schools for Negroes

President: V. D. Johnston, Howard University; secretary: L. H. Foster Jr., Tuskegee Institute.

Association of College Unions

President: Vernon L. Kretschmer, University of Illinois; secretary-treasurer: Edgar A. Whiting, Cornell University; editor of publication: Porter Butts, University of Wisconsin.

Convention: April 27-30, Broadmoor Hotel, Colorado Springs, Colo.

Association of Physical Plant Administrators of Universities and Colleges

President: William F. Holman, University of Minnesota; secretary-treasurer: A. F. Gallistel, University of Wisconsin.

Convention: May 16-18, University of Arkansas, Fayetteville.

American College Public Relations Association

President: Max E. Hannum, Franklin and Marshall College; secretary-treasurer: Edward P. Vonderhaar, Xavier University, Cincinnati.

Convention: April 26-30, Washington Hotel, Washington, D.C.

College and University Personnel Association

President: Donald E. Dickason, University of Illinois; secretary-treasurer: Marion Darr, Purdue University.

National Association of College Stores

President: John H. Jenkins, St. Louis University; executive secretary: Russell Reynolds, 189 West Madison Street, Chicago.

Convention: April 27-30, Los Angeles.

National Association of Educational Buyers

President: Charles W. Hoff, University of Omaha; secretary-treasurer: Bert C. Ahrens, 45 Astor Place, New York, N.Y.

Convention: May 11-14, Hotel Statler, Boston.

PRODUCT INFORMATION

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Electric Typewriter
- 953 Remington Rand Inc.
Trend, Functional Library Furniture
- 954 Lyon Metal Products, Incorporated
Steel-Wood Lockers
- 955 Clarke Sending Machine Co.
Full Line of Floor Machines
- 956 E. I. du Pont de Nemours & Co., Inc.
Window Shade
- 957 Finnell System, Inc.
Map Truck
- 958 The Celotex Corp.
"Fissuretone" Mineral Tile
- 959 Dixie Cup Co.
Portable Beverage Dispenser
- 960 Troy Laundry Machinery Div.
"Slide-Out" Washer
- 961 The B. F. Goodrich Co.
Sponge Rubber Mat Backing
- 962 Detroit Steel Products Co.
Fenestra Entrance Doors
- 963 Fremont Rubber Co.
Duo-Cut Tile
- 964 Three Dimension Co.
Reading Rate Controller
- 965 Refrigeration Engineering Corp.
Freezer-Coolers
- 966 Crestwood Recorder Corp.
MagicTape Recorder
- 967 Southern Cross Mfg. Corp.
All-Purpose Washer
- 968 Johns-Manville
Putty and Accessories
- 969 Addressograph-Multigraph Corp.
Cardoplate Self-Writing Record
- 970 Jordon Refrigerator Co.
Reach-In Refrigerator
- 971 Despatch Oven Co.
Electric Oven
- 972 Automatic Pencil Sharpener Co.
Electric Eraser
- 973 Westinghouse Electric Corp.
Bottle Vendor

Key

- 974 American Optical Co.
Spencer Scherer's Microscope
- 975 Thomas A. Edison, Inc.
Disc Vocewriter
- 976 Vogel-Peterson Co.
Coalroom Racks
- 977 The Electric Hotpack Co., Inc.
Electric Ceramic Kiln
- 978 Jackson Dishwasher Co.
"I-B" Dishwashing Machine
- 979 Coldwell-Philadelphia Lawn Mower Co.
Badger Jr. Lawn Mower
- 980 The Mitchell-White Corp.
Insecticide Microsols
- 981 General Electric Transmitter Div.
FM Broadcast Transmitter
- 982 The Imperial Brass Mfg. Co.
Tube Cutter
- 983 Armstrong Cork Co.
Dusk Top Linoleum
- 984 General Slicing Machine Co., Inc.
Meat Chopper
- 985 Montgomery Mfg. Co.
Program Timers
- 986 Air Correctives, Inc.
Air Freshener
- 987 Thermo Cuber Co., Inc.
CooDishner
- 988 Roltscreen Company
Fella Lite-Proof Shades
- 989 The Redareed Corp.
Redareed Organ
- 990 Allied Radio Corp.
Knight Wire Recorder
- 991 Fischman Company
Soda-Pak Fountain
- 992 Bolte Products Sales, Inc.
Seahurst Bottleless
- 993 Audio Devices, Inc.
Recording "Chip-Chaser"
- 994 Kerrigan Iron Works, Inc.
Sectional Steel Bleachers
- 995 Davos & Reynolds Co., Inc.
Paint Brushes

Key

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Tampatch Floor Patch
- 997 Onondaga Pottery Co.
Syracuse China Patterns
- 998 National Oats Co.
Bale-Oats
- 999 The Mott-Mower Co.
Lawn Mowers
- 1 Hawitt Restroom Div.
Latex Pillow
- 2 The Kent Company, Inc.
C-18 Floor Machine
- 3 J. A. Zurn Mfg. Co.
Drain Interceptor
- 4 Paper Cup and Container Institute
"Portion Control Manual"
- 5 Angelina Jacket Co.
1949 "Blue Book of Uniforms"
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"Stainless Steel Dishes"
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- 15 The Formica Co.
Adoption of NEMA Standards
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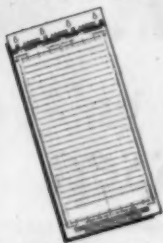
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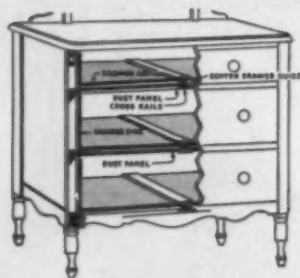


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This is undoubtedly one of the first classrooms to be measured against the recommendations of American Standard Practice for School Lighting, sponsored by I.E.S. and A.I.A., and approved September 20, 1948. This child-conditioned classroom in John Simpson Junior High School, Mansfield, Ohio, meets or better all artificial lighting requirements of American Standard Practice, as well as (with the exception of the floor) those of the National Council on Schoolhouse Construction.

Description of Classroom: Room 101, John Simpson Junior High School, Mansfield, Ohio. 30 feet long, 22 feet wide, 12 feet high. Ceiling white. Walls yellow and turquoise. Natural finish seating. Light green chalkboards. Ivory tackboards. Double row of diffusion screens mounted at windows.

Lighting Installation: Four continuous rows of two-lamp, 40W Wakefield Star units with luminous indirect plastic reflectors using 3500° white fluorescent lamps.

Weather Conditions: The survey was made on November 26, 1948, seven months after installation. The day was dark and cloudy with sky brightness so low the brightness of the diffuser at the window was approximately the same as that of the wall adjacent to it (66 footlamberts).

A copy of the complete detailed engineering report is yours for the asking. It is interesting to note that all equipment and materials used in this classroom are regularly available from manufacturers' stocks, and we will be glad to supply manufacturers' names, catalog numbers and descriptions of materials on request. Write to The F. W. Wakefield Brass Company, Vermilion, Ohio.



Comparison of Brightness Ratios

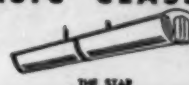
	Room 101 John Simpson Junior High School	American Stand- ard Practice for School Lighting	National Council on Schoolhouse Construction
Brightness of paper to brightness of desk top	1 to 1/1.6	1 to 1/3	1 to 1/5
Brightness of paper to brightness of floor	1 to 1/9	1 to 1/10	1 to 1/5
Brightness of paper to brightness of ceiling	1 to 2.78 (max.)	1 to 10	1 to 10
Brightness of luminaires to surfaces adjacent to them in the visual fields	3.4 to 1 (max.)	20 to 1	no recommendation
Brightness difference in the surrounding field between the brightest and darkest surfaces	18.5 to 1	no recommendation	50 to 1
Brightness difference in the peripheral field between the brightest and darkest surfaces	24 to 1	no recommendation	250 to 1
Lighting level	38 ft. c. lowest; 69 average	30 ft. c. min.	20 ft. c. min.

Comparison of Reflectances

	Above 85%	80 to 85%	85%
Ceiling	62 to 70%	50 to 70%	50% min.
Walls	48%	30 to 40%	40 to 60%
Trim	67%	50 to 60%	no recom.
Tackboards	24%	15 to 20%	30% max.
Chalkboards	30 to 55%	35 to 50%	30 to 40%
Desk Tops	22%	15 to 30%	30 to 40%
Floor			

Wakefield Over-ALL Lighting

A BASIC CLASSROOM TOOL



SMART, NEW DORMITORY ROOM . . . BY SIMMONS! *Attractive, all-steel furniture assures years of outstanding service . . . at low cost.*

FOR RELAXATION OR STUDY . . . IT'S SIMMONS! *No matter how large or small the room, Simmons Dormitory Furniture is your best buy.*



Beautiful Rooms at **MARYMOUNT COLLEGE**

with **SIMMONS**
Dormitory Furniture



STUDENT rooms at Marymount College are "homey" as well as comfortable. They're completely equipped with Beautyrest mattresses and Simmons all-metal furniture . . . the practical dormitory furniture that draws "straight A's" in beauty, construction and durability.

Other fine features of Simmons steel furniture are dresser drawers that never warp or stick . . . one-piece fireproof construction . . . welded supports . . . and the beautiful, long-wearing Simfast finish that doesn't mar or chip from constant use, spilled liquids, or exposure to heat and sunlight.

It will pay you to get more information on the low maintenance of Simmons furniture. See your Simmons distributor, or write to



↑ **SELECTION OF STYLE AND COLOR . . .**
SIMMONS quality furniture . . . finished
in your choice of rich grained, solid or
two-toned color combinations.

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COLLEGE and UNIVERSITY BUSINESS



Northern Hard Maple Floor—Greenwood Gymnasium, La Grande, Oregon—Charles B. Miller, Pendleton, Oregon, Architect

FOR PERMANENCE . . .

floor with **NORTHERN HARD MAPLE**

definitely modern—truly resilient



Modern schools are proudly designed to reflect the cultural background of the community. They are built for permanence. With specifications calling for the highest grade of materials, this high standard creates no problem when classrooms, gymnasiums, auditoriums, shops and offices are floored with long life Northern Hard Maple Flooring.

Floors of Northern Hard Maple will last the life of the building. Northern Hard Maple Flooring is dense, strong, heavy, remarkably hard, supremely durable. Yet, it is definitely modern—adds interior beauty.

Important—Northern Hard Maple has a subdued grain pattern, in keeping with the changing taste, which is away from *gaudiness* in woods. And, **MFMA** flooring,

properly finished, will insure low-cost maintenance over the years.

REMEMBER: A floor of Northern Hard Maple is a *true* floor—not a floor covering. And, *truly resilient*. Northern Hard Maple's resilience absorbs shock—means less fatigue and real comfort underfoot. Schools built for permanence deserve a *true, resilient* and permanent floor. Northern Hard Maple welcomes close comparison for all-round suitability, for cost, for investment value.

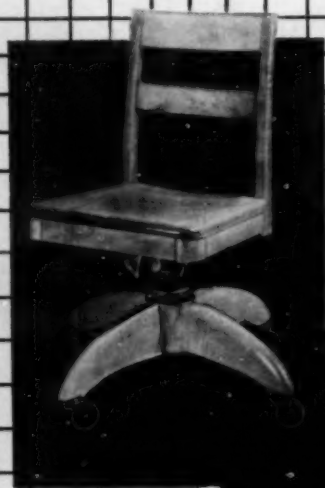
Ask your architect about **MFMA** (trademarked) Northern Hard Maple, in strips or patterned designs. See Sweet's, Section 13/g/6 for catalog data.

Write us for list of approved floor finishing products and for information on the economical use of the lower grades of **MFMA** Flooring for school floors.

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Comfortable chairs . . . strong chairs . . . handsome chairs. Chairs styled the *TREND* way to bring new functional perfection to your library.

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☐ *TREND* Chairs

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☐ "Planning the School Library"

NAME

POS.

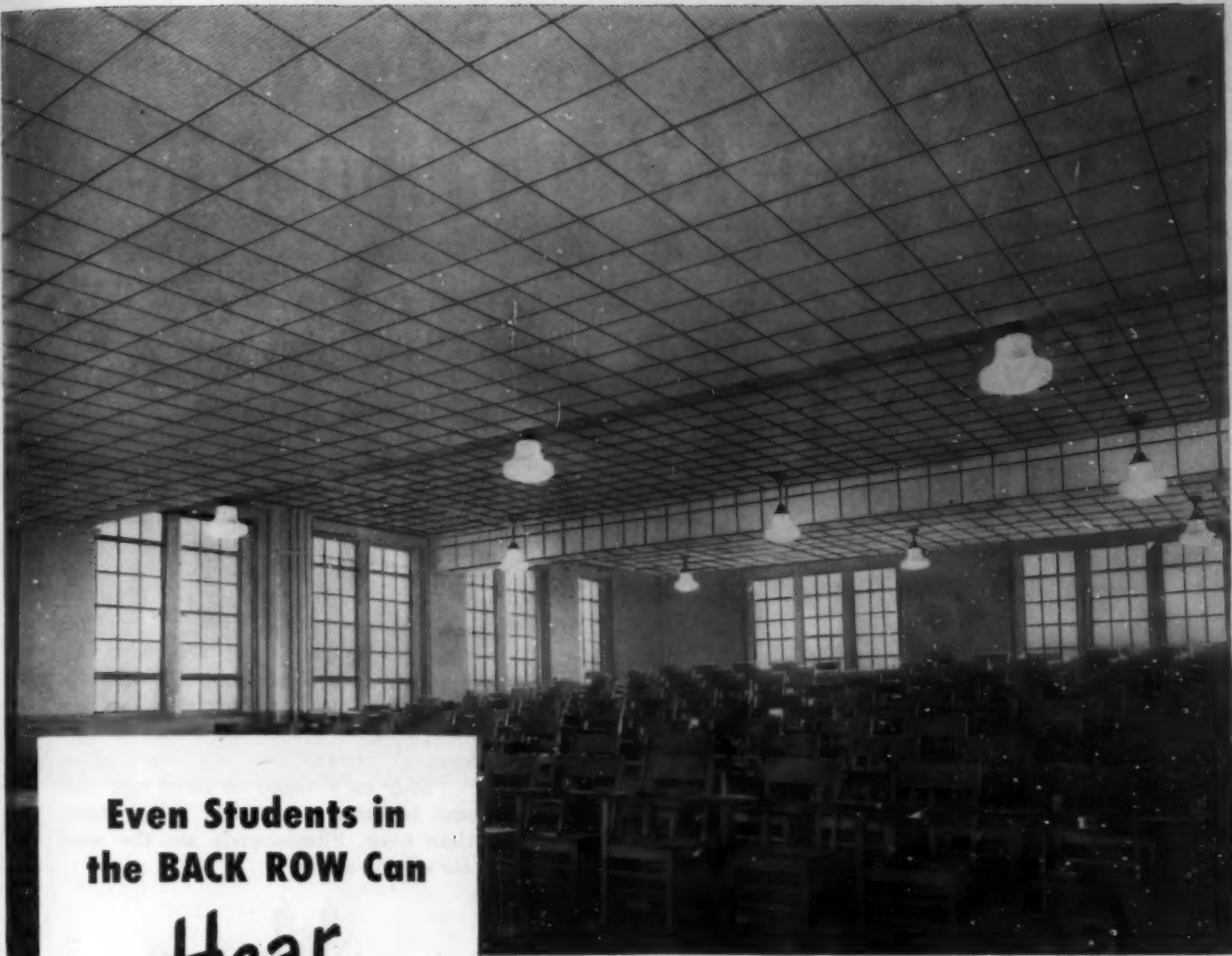
LIBRARY

STREET

CITY

STATE





**Even Students in
the BACK ROW Can**

**Hear
Distinctly**

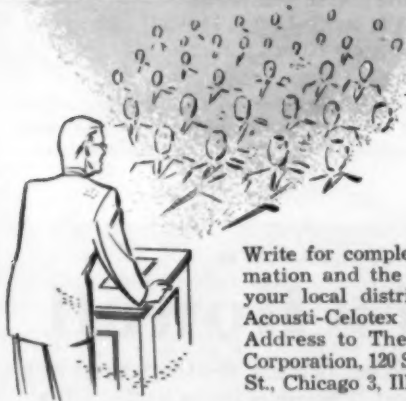
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Sound Conditioning
QUIETED
this Lecture Hall!**

CLASSES ARE LARGER and teaching is more difficult on today's overcrowded campus. Even "overflow sections" are filled to capacity. And that means harder learning, too, more back-row students to consider.

Can every single student hear lectures clearly in your crowded lecture halls? Or are there repeated calls for "Louder, please" or complaints of "We can't hear!" Unchecked reverberation and noise hinder the lecturer and listener, alike. Even to students in the *front* rows, the best instruction is of little value when hearing is hampered by noise or bad acoustics!

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PRODUCTS FOR EVERY SOUND CONDITIONING PROBLEM

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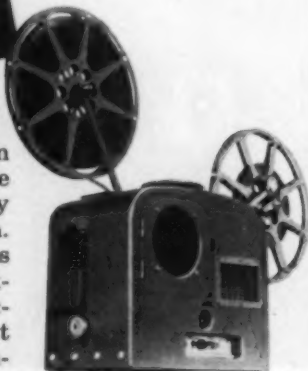
Better 16mm Sound Film Projectors
for every need

NEW lighter weight
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NEW

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A complete 16mm sound film projector in one compact case . . . light in weight . . . easy to carry from room to room. Includes all the new features presented above. Shows rock-steady, flicker-free screen pictures with brilliant, 1000-watt illumination. Has higher undistorted sound output than any other make of lightweight projector. The built-in 6" speaker lifts out easily if desired, for placement near screen. Larger speakers available, for complete versatility. Approved by Underwriters' Laboratories. With fast, Filmocoted F1.6 lens and 6" speaker, only **\$449**



ACADEMY FILMOSOUND

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Yes, Bell & Howell Filmosounds are now even finer than before . . . even farther ahead in their *superiority for exacting school service.*

Outstanding advantages include a new aluminum sound head that reduces noise vibration . . . even finer performance from the sound system . . . improved ventilation for cooler operation and longer life . . . new reel arms that are attached or detached in a jiffy . . . new lightness in weight. New Filmosound cases are streamlined, smaller in every dimension.

Filmosounds present both sound and silent films . . . may be stopped to show still pictures and reversed to review a sequence. More than ever, Filmosounds are the wise choice for school use.



Extra School Services from Your Filmosound!

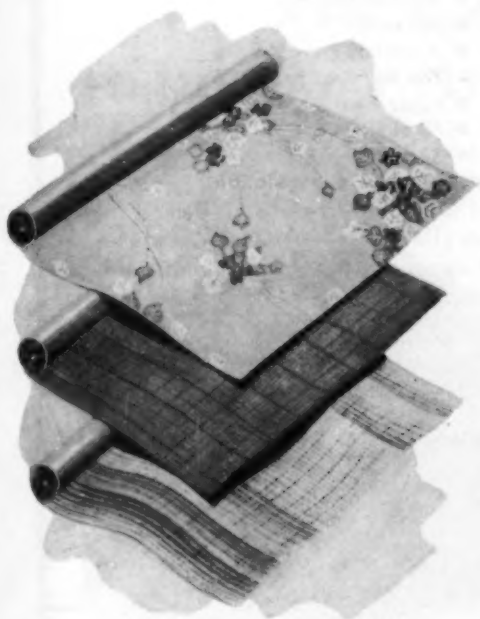
With a choice of four speakers, Filmosound does a superb job of presenting 16mm sound films, color or black-and-white, before any sized audience in classroom or auditorium. But that isn't all! For voice amplification at assemblies, lectures, sport events, etc., just plug a microphone into the jack provided. And for high-fidelity reproduction of phonograph records, just connect a B&H turntable to your Filmosound. Give your school the great advantages of Filmosound versatility! For full details write Bell & Howell Company, 7192 McCormick Road, Chicago 45.

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FABRON offers more than 160 patterns and colors, many of them styled for use in dormitory rooms, classrooms, corridors, offices, etc.—a latitude of choice unmatched by conventional treatments. The material is furnished in easily handled rolls, 27" wide, and is applied in the same manner as wallpaper.

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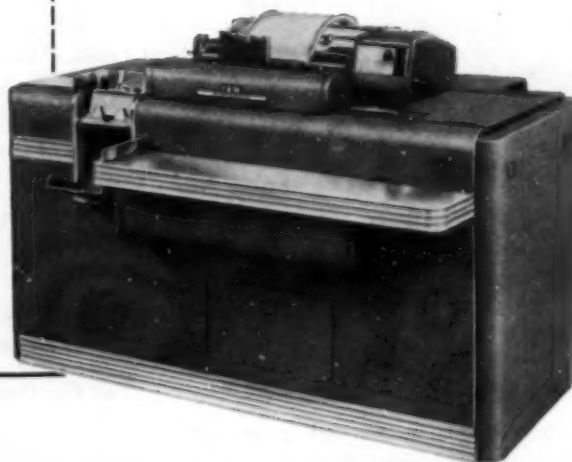
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It's Streamlined

FOR GREATER CLEARANCE... Conserves Storage Space

The new *Finnell Mop Truck* gives you all the fine features of the former *Finnell* truck plus several new ones. The new model has rounded corners and recessed wheels—especially desirable features when the truck has to be moved through narrow passages, and for conserving storage space.

A mop shield beneath the wringer of the truck prevents mop from dropping into the dirty water when being wrung. Wringer-rolls are of steel, and the truck has four double-disc pressed-steel wheels, two of which swivel... rubber or metal tires... and two 28-gallon tanks. Ruggedly constructed to withstand hard usage. Comes in stainless steel and in galvanized iron.

Finnell also makes a Mop Truck for smaller operations, with two 7½-gallon tanks. The com-

plete *Finnell* line includes *Combination Scrubber-Vacuum Machines*... *Portable Machines* for wet-scrubbing, dry-scrubbing, dry-cleaning, waxing, and polishing... *Heavy Duty Vacuum Cleaners* for wet and dry pickup... *Steel-Wool Pads* and other accessories... *Cleansers, Sealers, and Waxes* for every floor-maintenance need.

The nearby *Finnell* man is readily available to help train your maintenance operators in the proper use of *Finnell Equipment and Supplies*. For consultation or literature, phone or write nearest *Finnell Branch* or *Finnell System, Inc.*, 4404 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.



FINNELL SYSTEM, INC.

Pioneers and Specialists in

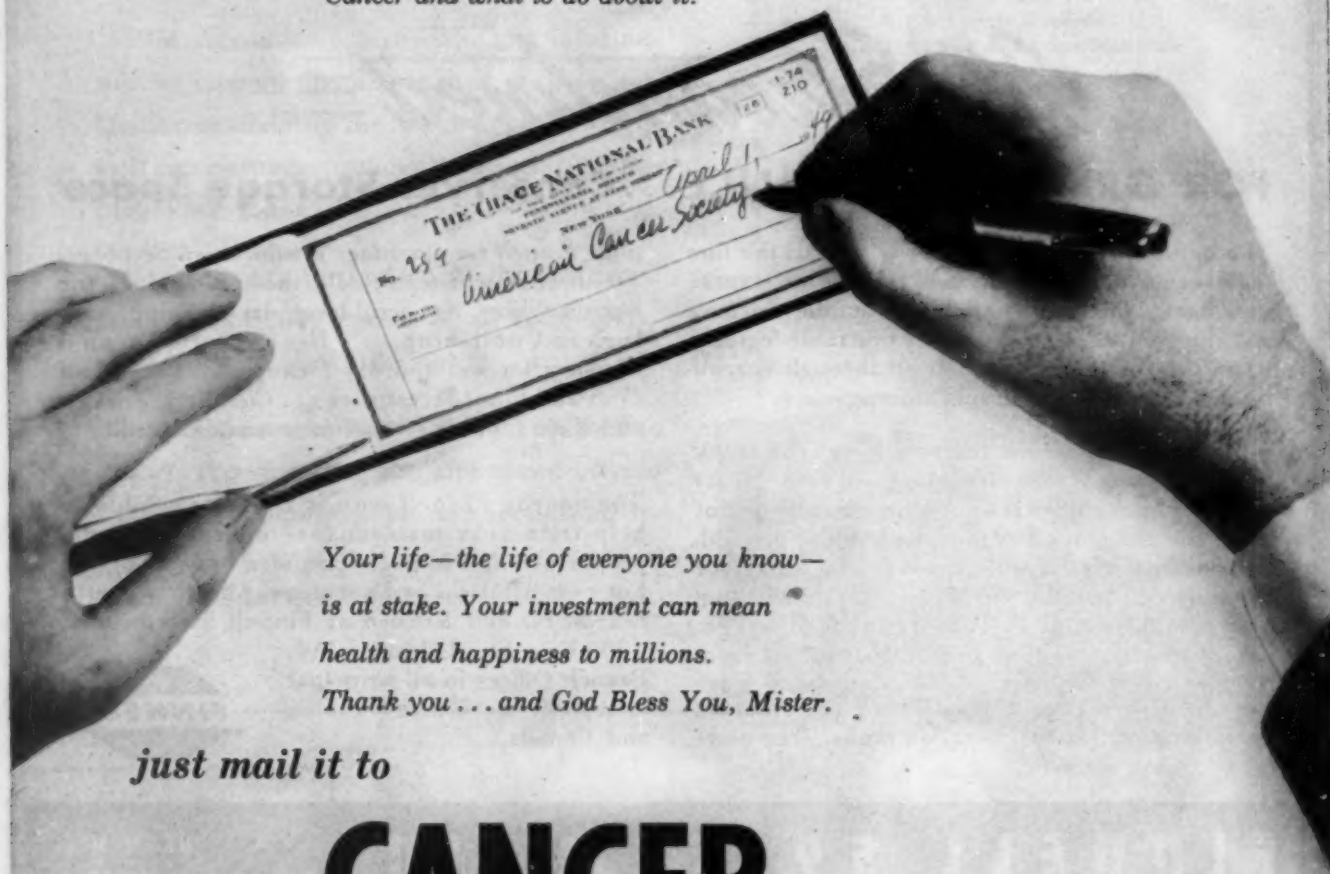
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES
IN ALL
PRINCIPAL
CITIES

God bless you, mister

... thousands of Cancer patients are grateful to you!

Cancer's annual toll of 200,000 lives is grim proof of the need for your continued generosity. The money you contribute to the American Cancer Society helps pay for the development of methods of treatment which are now saving about one-quarter of the people who are stricken with Cancer ... people who might otherwise have died. Your money supports the work of more than a thousand specialists who are fighting to find the cause and cure of Cancer. And it finances a vast education program that trains professional groups, tells the public how to recognize Cancer and what to do about it.



*Your life—the life of everyone you know—
is at stake. Your investment can mean
health and happiness to millions.*

Thank you ... and God Bless You, Mister.

just mail it to

CANCER

Just write "CANCER" on the envelope containing your contribution. It will be delivered to the American Cancer Society office in your state.



PETE'S THE *Picture of Health*

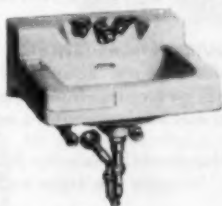
... AND CRANE PLUMBING IS IN THE PICTURE

Pete doesn't give much thought to what's behind it—he only knows he feels just swell.

But *Crane designers* know what it takes to keep him that way. The fountain he just drank from . . . the Crane lavatories . . . showers . . . toilets . . . urinals . . . all are designed for maximum health protection.

And, of course, health comes first. But the very things that safeguard health—Crane sanitation, Crane dependability—these are also important to low maintenance. Less time spent on cleaning, less time lost on repairs—it *pays* to have the best!

You can have Crane school fixtures in a type and style for every college need. See the complete line at your Crane Branch, Crane Wholesaler, or Plumbing Contractor, whether you plan a new installation or the modernizing of your present facilities.



for health . . . Crane lavatories stay sparkling clean with a daily once-over. To renew one of these Dial-eze faucets, just slip out the old cartridge unit, slip in the new—one unit fits all Crane faucets. Shown: the 1-135 Oxford Lavatory.



for health . . . Crane urinals flush thoroughly every time—automatically, if desired. Crane supplies not only the fixtures themselves, but also the piping that makes them work. Shown: a Crane Sanitor Urinal.



for health . . . Crane wall-mounted toilets make for easy cleaning below, highest sanitation all around. Shown: a Crane Lowell Closet.



for health . . . Crane drinking fountains are designed to prevent any possible contamination. Shown: a Crane Corridor Fountain.

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A modern bookstack is more than just shelving installed in a building; it is a part of the building structure itself. Bookstacks must be functionally designed to meet the requirements of efficiency, convenience and flexibility—the fundamental requisites of modern library construction.

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TORO Power Roller

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COURTS • BASEBALL DIAMONDS •
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1. **COSTS FAR LESS** than heavier power rollers ... yet 18 years of popularity prove the Toro ample in weight for all turf jobs.
2. **PRACTICAL SIZE**...its compact design and short wheelbase make the Toro exceptionally easy to maneuver ... permit it to go through narrow gates and into the hard-to-get-at places. It can be loaded into a light truck or transported under its own power.
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CORPORATION
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KILL WEEDS

IN LARGE TURF AREAS

at far less cost than former weed-eradication methods!

HAVE BEAUTIFUL, WEED-FREE TURF WITH

GOES ON FAST

—treats 7
to 15 acres per hour.

GOES FAR

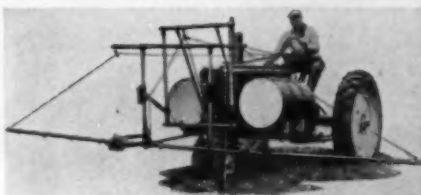
—use only 1 to
2 pints per acre in only 5
gallons or less of water.

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A Proven Ester Formulation of 2,4-D

Highly Effective! Authorities have found that the ester forms of 2,4-D used in Agricultural Weed-No-More penetrate weed leaves within 5 minutes or less, then begin to work instantly.

Saves Time and Money! Using the new Weed-No-More spraying method developed and proved by Sherwin-Williams Research, one man can spray as many as 100 acres in a single day.



New low-gallonage spray attachment

Easy to Apply! Agricultural Weed-No-More is effectively applied to large turf areas with a simple, low-cost spraying attachment quickly assembled and mounted on a tractor, Jeep, or truck. Pump can be driven by power take-off or a small gas



NEW MOVIE TELLS ALL

Committees and boards interested in large areas of weed-free turf should see the new, full-color, 16mm sound film, "Agriculture's New Conquest." It tells the full story of weed control with 2,4-D on farms and large turf areas. To arrange for a showing, consult your dealer or write direct to Agricultural Chemicals Division, 1276 Midland Building, Cleveland 1, Ohio.



engine. Hand sprayers can be used for small areas. One to 2 pints of Weed-No-More in only 5 gallons or less of water per acre kills dandelion, plantains, buckhorn, and other turf weeds.

For full information phone your supply dealer or write direct to Agricultural Chemicals Division, 1276 Midland Building, Cleveland 1, Ohio.

Acme White Lead & Color Works, Detroit
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PRODUCT OF SHERWIN-WILLIAMS RESEARCH

TO ENDOWMENT FUND MANAGERS

A Message of Special Importance

After declining for 25 years, interest rates are now rising and a long upward trend is likely to last for several years. This change involves a threat to the value of your endowment fund as well as an opportunity to increase your institution's income.

We have had years of experience in helping colleges and similar institutions in preserving their capital and, where possible, increasing their income. In one instance, for example, we have built up a college's net yield by $\frac{3}{4}$ of 1% in the past three years, while still maintaining the value and high quality of its investments. In another case, the increase was $\frac{1}{2}$ of 1% in two years.

Perhaps we could also help you to protect your endowment fund and increase your income, without sacrificing safety. We would welcome the opportunity to discuss this question of investment guidance with you.



Write to C. Lloyd Thomas, Vice-President, for full details.

UNITED INVESTMENT COUNSEL

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30 Row Portable Steel Grandstand for Alabama University Set Up on 2 x 10 Sleepers.

Are the spectators in your grandstands safe? Be sure—with steel stands you can be. Williams Steel Grandstands! Their construction incorporates the famous Williams 4-to-1 factor of safety which exceeds all code requirements and cuts insurance costs "to the bone."

Our 35 years' experience covers the manufacture and erection of steel double deck and canopied stadiums—seating up to 20,000—down to the smallest portable grandstand for outdoor or indoor use. Send us dimensions and space to be filled for prompt quotation.

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PORTABLE • PERMANENT INDOOR • OUTDOOR FOLDING • ROLLING

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Gentlemen: Send me your new FREE grandstand catalog.

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Fights Fire Faster

Only the Fyr-Fyter **INSTANT** extinguisher gives the 6-way protection of the "loaded stream"

You are looking at a fire extinguisher totally unlike any other manufactured today.

Here, for the first time, you can get six important fire fighting features . . . all combined in one easy-to-use extinguisher approved by the Underwriters' Laboratories.

How is this possible? The answer is *Karbaloxy*, a revolutionary "loaded stream" chemical. Instead of conventional chemicals, the Fyr-Fyter **INSTANT** is charged with *Karbaloxy* under stored pressure. Simply by tapping the plunger on the ground or floor, the *Karbaloxy* charge is forced from the **INSTANT** in a long, powerful stream.

Thousands of Fyr-Fyter **INSTANT**s are now in use . . . many by large U. S. companies. Get the facts and you too will specify **INSTANT** protection against fire.

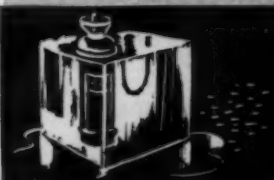
1 FAST ACTING . . . kills 10' x 10' Underwriters' test panel blaze in just 11 short seconds.



2 RETARDS RE-IGNITION . . . even excelsior sprayed by Karbaloxy can't be ignited by blowtorch.



3 ANTI-FREEZE . . . the **Instant** operates perfectly at temperatures down to 40° below zero.



4 EASY-TO-USE . . . just invert, tap plunger on floor or ground, play stream on base of fire.



5 MORE EFFICIENT . . . 1½ gallon **Instant** does better job than 2½ gallon conventional types.



6 DOUBLE PROTECTING . . . kills fire in wood, paper, trash, etc. and fire in flammable liquids.



Fyr-Fyter

Extinguishers

The Fyr-Fyter Co.
Dayton 1, Ohio
Dept. 128-52



THERE'S ECONOMY, TOO, IN THESE "EASY-TO-SERVICE" MOSINEE TOWELS

MOSINEE Towels in MOSINEE controlled Cabinets make an "easy-to-service" combination that spells efficiency and economy...fewer towels needed, less frequent servicing, fewer re-fills, less time consumed in keeping washrooms supplied. By functioning so efficiently, these good towels discourage wasteful use. Their fast absorbency, chamois-like smoothness and great strength are obvious advantages that make MOSINEE Towels symbolic of good school management.

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Green Bay, Wisconsin
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MOSINEE

Sulphate Towels

PREP-TOWLS • ZIP-TOWLS • TRIM-TOWLS
TURN-TOWLS • ROLTOWLS

What is an "Individualized" Student Medical Reimbursement Plan?

The Student Medical Reimbursement Plan is a specially developed extension of group insurance offered through colleges and independent schools. By means of this Plan, existing on-campus Health Department services may be supplemented to provide all the "extra" outside medical and hospital protection needed by the institution against the costly disabilities that so often disrupt student life.

In short, this Plan, through extreme flexibility, is "individualized" to meet the needs of the institution. It adds only the elements of protection the school or college requires—nothing more—thus operating at lowest possible cost. It is a unique Plan protecting the student against large and unexpected medical bills, and bringing to the institution a comprehensive, fully integrated health program.

Write for complete information concerning the advantages to be obtained for your institution from this specialized plan.

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Sanymetal "PORCENA"

*Trade Mark Reg. U. S. Pat. Off.

(Porcelain on Steel)

TOILET COMPARTMENTS

Sanymetal "PORCENA" CENTURY Type Ceiling Hung Toilet Compartments offer the utmost in sanitation and provide modern, distinctive toilet room environments for schools, institutions, terminals and other public buildings.

How to Protect a Toilet Room Environment Against Premature Obsolescence

● There is one environment you can protect against premature obsolescence—the toilet room environment.

Toilet room compartments usually dominate a toilet room, influencing the toilet room environment. Sanymetal "PORCENA" (Porcelain on Steel) Toilet Compartments provide a generous measure of protection because of these features. Sanymetal "PORCENA"

(Porcelain on Steel) Toilet Compartments always look new, do not absorb odors, are moisture and rust proof and resist the corrosion of ordinary acids. The glistening, glass-hard, "PORCENA" (Porcelain on Steel) finish can be wiped clean as easily as a porcelain table top, and greatly reduces sanitation and maintenance costs.

Sanymetal "PORCENA" (Porcelain on Steel) Toilet Compartments combine the results of over 35 years of specialized skill and experience in making over 100,000 toilet room installations. Ask the Sanymetal Representative in your vicinity (see "Partitions" in your phone book for local representative) for helpful suggestions about planning suitable toilet room environments . . . Refer to Sanymetal Catalog #1 in Sweet's Architectural File for 1949.

THE SANYMETAL PRODUCTS CO., INC.
1696 URBANA ROAD • CLEVELAND 12, OHIO

Sanymetal

*Trade Mark Reg. U. S. Pat. Off.
"PORCENA" (Porcelain on Steel)

TOILET COMPARTMENTS, SHOWER STALLS AND DRESSING ROOMS



Write for Sanymetal Catalog #6 which illustrates modern toilet room environments suitable for all types of buildings. Several attractive designs in a wide range of colors available. This catalog is also contained in Sweet's 21b Architectural File for 1949.

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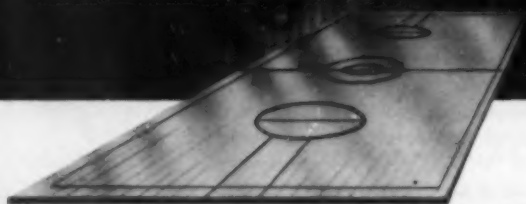
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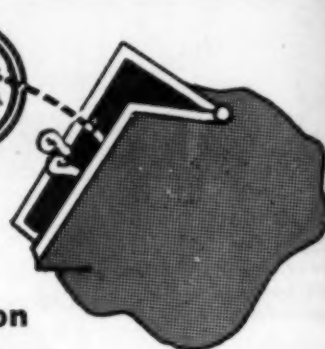


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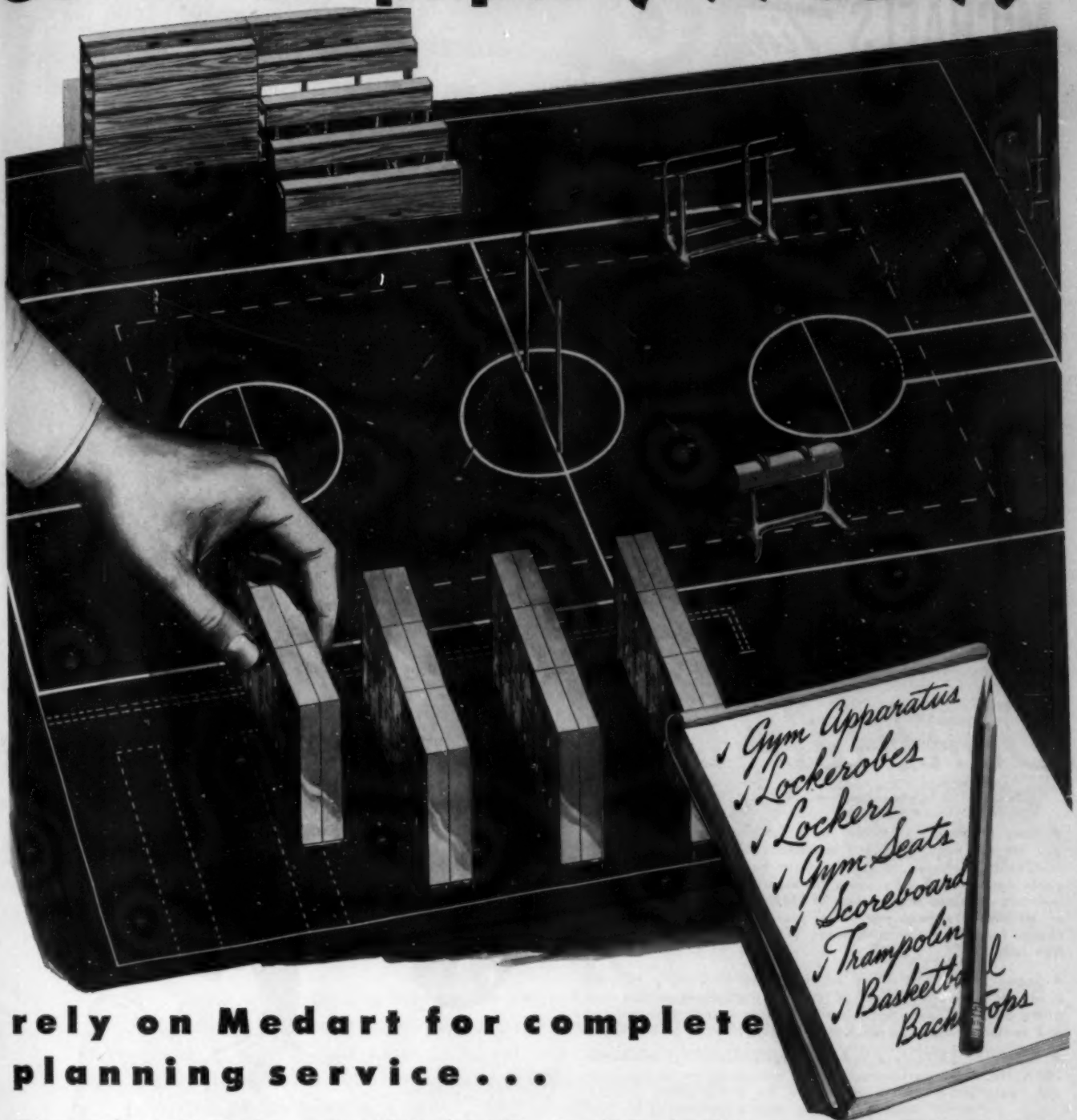
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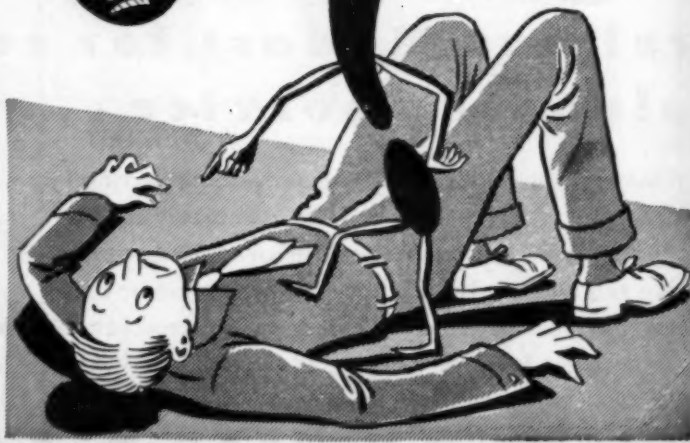
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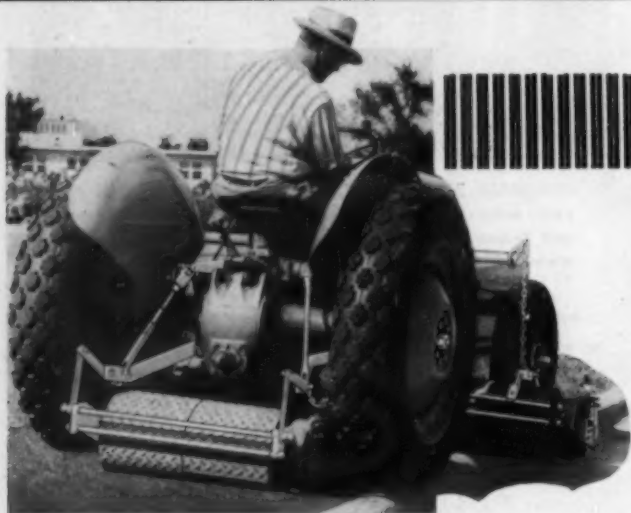
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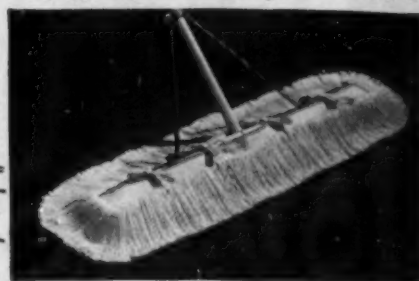
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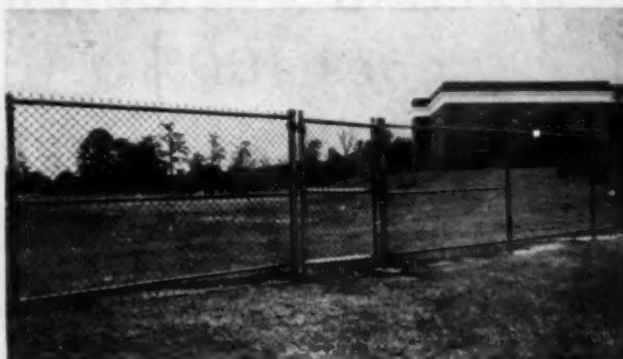


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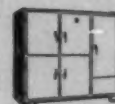
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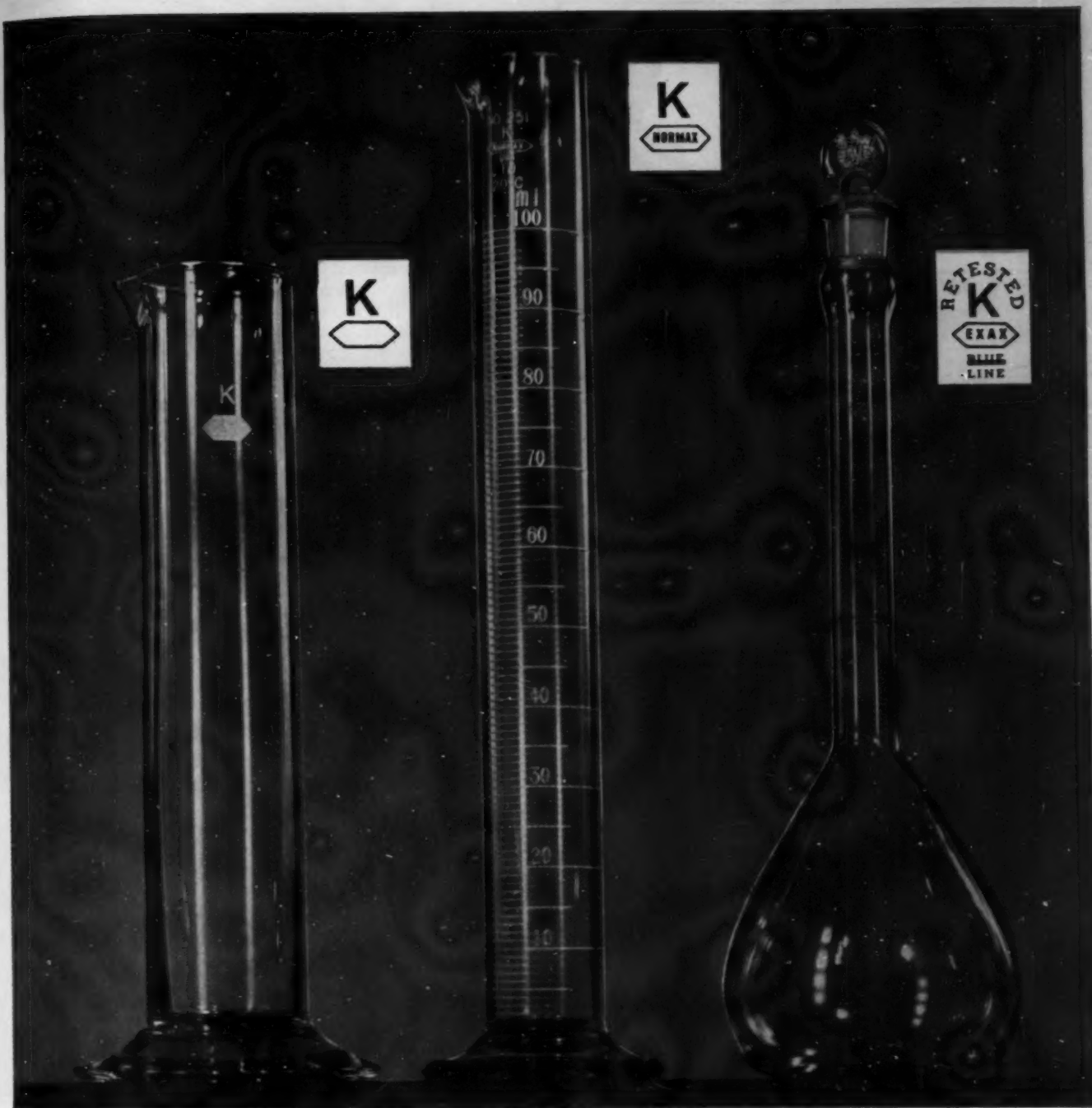
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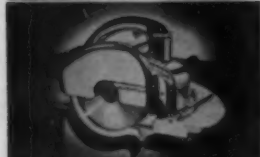
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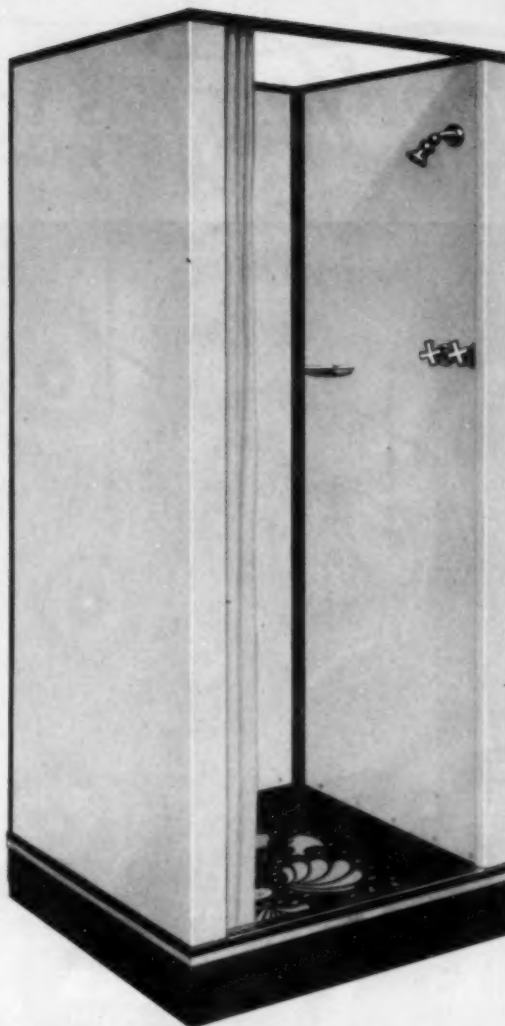
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C-A4



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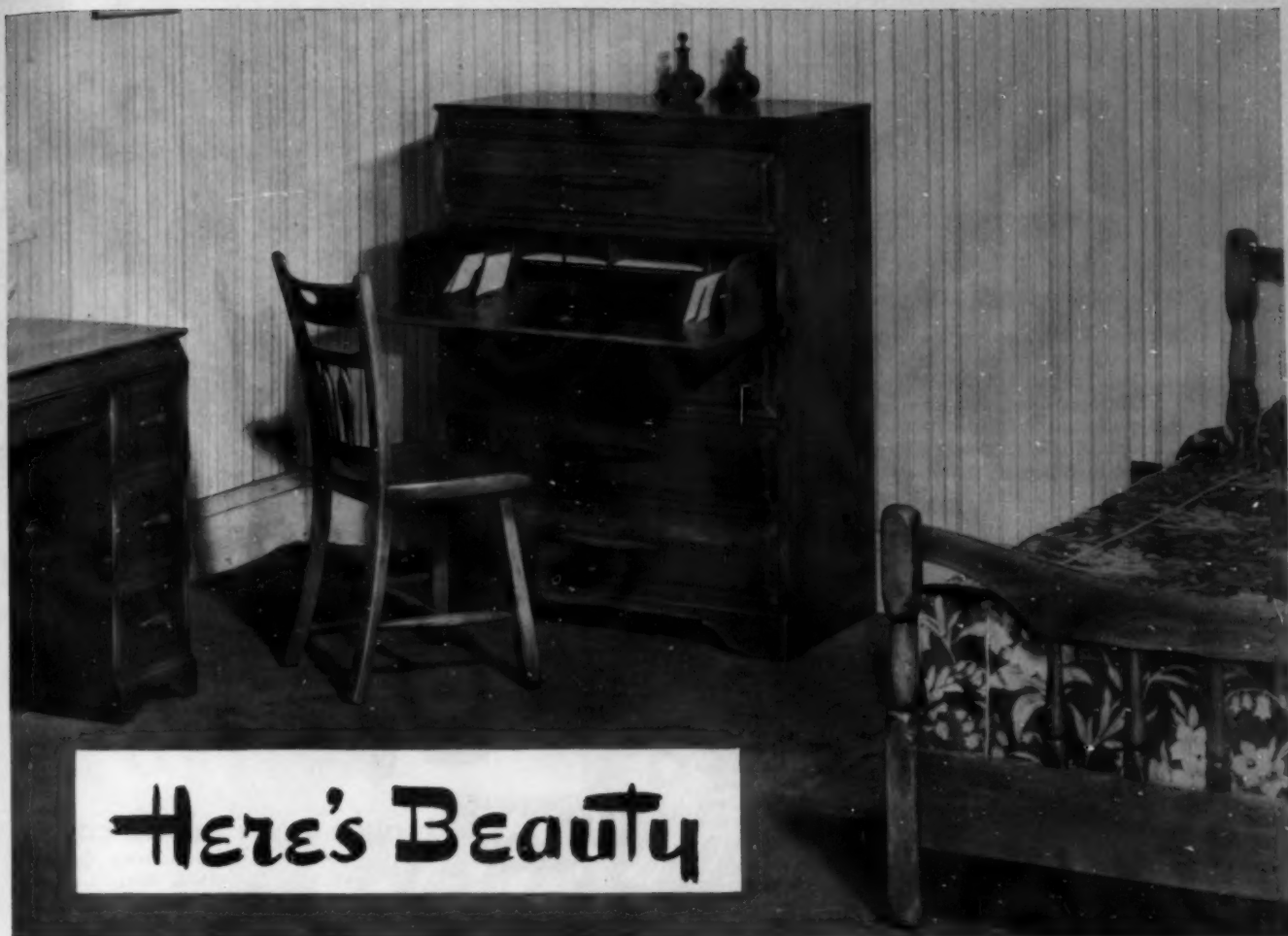
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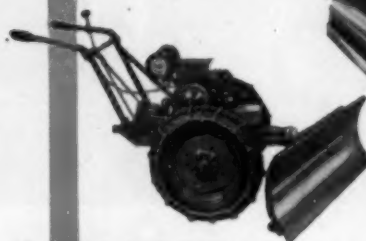
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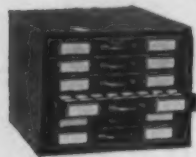
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WHAT'S NEW

APRIL, 1949

Edited by Bessie Covert

TO HELP you get more information quickly on the new products described in this section, we have provided the postage paid card opposite page 48. Just circle the key numbers on the card which correspond with the numbers at the close of each descriptive item in which you are interested. COLLEGE and UNIVERSITY BUSINESS will send your requests to the manufacturers. If you wish other product information, just write us and we shall make every effort to supply it.

Electric Typewriter



The new IBM electric typewriters are compact, fully streamlined and finished in a soft tone of gray. The Navy blue keys are finger contoured and the mechanism beneath them is covered by a keyplate to improve appearance and prevent the accumulation of dust.

The new machine retains the light key touch for performing all the heavy operations which is a feature of earlier models and the new features include: readily-adjusted multiple copy control; four position ribbon control; keyboard margin set; electric ribbon rewind, and line position reset. The new machine is available in the standard model and also in the executive model which can be had with any one of four type faces. **International Business Machines Corp., Dept. CUB, 590 Madison Ave., New York 22. (Key No. 952)**

Functional Library Furniture

The Library Bureau of Remington Rand has designed a completely new line of library furniture which is basically functional and hand-crafted for extra beauty and efficiency. The new Trend line is the result of research and collaboration between designers, factory experts, library architects and librarians. The line is designed for efficiency in use and ease of maintenance. It has flush construction, rounded corners and absence of ornamentation.

Established standard dimensions are met throughout with supplementary shelving for additional needs designed to match the original equipment. The new Trend line is manufactured of fine hardwoods used to form Densi-Wood, a wear-resistant product with reduced possibilities of splintering, especially applicable

for library use. The line can be had in light or dark finish. **Remington Rand Inc., Library Bureau, Dept. CUB, 315 Fourth Ave., New York 10. (Key No. 953)**

Steel-Wood Lockers

The new steel-wood lockers have framework and doors of steel finished in green enamel with all other parts of natural brown color, steel reenforced, durable Masonite. The new lockers are available for prompt delivery and can be had either with legs for corridor and other contact installation or without legs for recessing.

The new lockers are made in both single and double tier in all of Lyon standard sizes. The Lyon recessed handle is finished in satin chrome with number plates in the handle. The lockers may be had with steel sloping tops and closed bases and are designed for long, hard service. **Lyon Metal Products, Incorporated, Dept. CUB, Aurora, Ill. (Key No. 954)**

Full Line of Floor Machines

Three new floor machines have been added to the line of Clarke Floor Maintainers giving them five machines, designed to meet every floor maintenance need. The three new machines include a 13 inch diameter brush model, a 15 inch and a 23 inch size. These supplement the 17 and 12 inch brush diameter models already available.

The line of Floor Maintainers is designed and fabricated for hard usage and dependable service. They are easy to operate, quiet and economical. Heavy-duty repulsion-induction motors, gear cases and drive bearings are designed for efficient service on any maintenance work whether scrubbing, waxing, polishing, steel wooling, disc sanding or rug shampooing and attachments are available for all of these floor maintenance problems. The finger-tip action safety switch is controlled by either or both hands and adjustable handles are available on all models. The machines have a low overall height and are finished in polished aluminum. **Clarke Sanding Machine Co., Dept. CUB, Muskegon, Mich. (Key No. 955)**

Window Shade

A new type of window shade has been developed by the Fabrics Division of the Du Pont Company which should be of especial interest for dormitory use. Known as the "Tontine" fire-resistant, triplex quality, shadow-proof window shade, the product must pass a rigorous laboratory test before being released as fire-resistant. It will char but will not support combustion, according to report. The new shades are strong, light, sturdy and washable and are made to resist cracking, fraying and pinholing. They come in a wide range of fade-resistant colors. **E. I. du Pont de Nemours & Co., Inc., Dept. CUB, 350 Fifth Ave., New York 1. (Key No. 956)**

Finnell Mop Truck

The newly designed Finnell Mop Truck has rounded corners and recessed wheels which permit it to be used in small spaces and which save space when stored. The truck has two 20 gauge galvanized tanks, each with a capacity of 28 gallons, and No. 6 rubber plug outlets discharge beneath the tanks. The 3 inch steel wringer rolls have a wringer pressure of 75 pounds.

A feature of the new truck is a mop shield beneath the wringer which prevents mops from dropping into dirty water when being wrung. The truck rolls on 4 double-disc pressed-steel wheels, two of which swivel for easy maneuvering. The truck is ruggedly constructed to withstand hard usage and is



available in stainless steel or galvanized iron. **Finnell System, Inc., Dept. CUB, Elkhart, Ind. (Key No. 957)**

Fissured Mineral Tile

"Fissuretone" is the name of a new acoustical fissured Mineral Tile. It is an incombustible, rockwool tile with a travertine-like fissured surface which is supplied with a factory-applied coat of off-white paint finish with efficient light reflecting properties. The new tile was developed to provide a functionally efficient acoustical ceiling which would at the same time have a new design adaptable to traditional architecture and interiors as well as to modern decorative schemes. The Celotex Corp., Dept. CUB, 120 S. La Salle St., Chicago 3. (Key No. 958)

Portable Beverage Dispenser

A new Portable Drink Carrier has been announced for dispensing hot and cold beverages. The carrier is a light weight, stainless steel beverage dispensing unit that is easy to carry and easy to operate. The double-walled beverage tank, thoroughly insulated at sides, bottom and lid, is designed for keeping any hot or cold beverage at the desired temperature for as long as two hours. It can thus be used as a portable dispenser at athletic and other activities or on a counter as a stationary dispenser.

The carrier has a capacity of more than 8 quarts and a Dixie Cup dispenser, mounted on the lid of the carrier, holds enough cups for a complete serving of the carrier's contents. The unit is supported in front of the vendor by a carrying strap leaving both hands free for operation. Dixie Cup Co., Dept. CUB, Easton, Pa. (Key No. 959)

"Slide-Out" Washer

The "Slide-Out" feature of Troy Electromatic and Troy Electromanual washers is designed to facilitate unloading by eliminating the necessity of stooping and lifting. It simplifies the removal of laundry from the washer while washing clothes cleaner. With the "Slide-Out"



feature the load not only receives the drop and tumble action of an open pocket washer, but is subjected to a washboard action as the clothes slide down

the ribbed partition as well as a squeezing action on the upward rotation of the cylinder when the load is pressed against the perforated partition.

"Slide-Out" washers are available in three sizes: 42 by 84 inches, 42 by 54 inches and 42 by 36 inches which makes them suitable for small as well as large installations. Troy Laundry Machinery Div., American Machine & Metals, Inc., Dept. CUB, East Moline, Ill. (Key No. 960)

Sponge Rubber Mat Backing

Corrugated rubber matting is now available with a sponge rubber backing for longer wear, better traction, easier cleaning and greater comfort. The matting is $\frac{1}{4}$ inch thick, $\frac{1}{8}$ inch corrugated rubber matting and $\frac{1}{8}$ inch sponge rubber backing. It is 36 inches wide and is now available in 30 foot rolls. The B. F. Goodrich Co., Dept. CUB, Akron, Ohio. (Key No. 961)

Entrance Doors

The new Fenestra stock, hollow-metal entrance doors with large glass light are



furnished in one standardized size, 3 feet by 7 feet, for use in single or double openings, and are supplied with a standard cylinder lock. The doors may be hinged right or left to swing in or out and come complete with frames and hardware machined, fitted and ready to assemble. Attractive bronze push and pull bars and bronze ball-bearing hinges are available if desired. The doors are designed for entrance, exit, service door and other locations. Detroit Steel Products Co., Dept. CUB, 2250 E. Grand Blvd., Detroit 11, Mich. (Key No. 962)

Duo-Cut Tile

Fremont Rubber Tile is now available in a form which facilitates attractive floor designs. Regular 9 by 9 inch squares of rubber floor tile are bevel die cut so that a 6 by 6 inch square can be readily removed from the inside and an insert of another color substituted. Known as Duo-Cut, these specially cut tiles afford many possibilities in pattern designing and color schemes since the tile is available in 13 plain and marbled colors. Fremont Rubber Co., Dept. CUB, 287 McPherson Highway, Fremont, Ohio. (Key No. 963)

Reading Rate Controller



The new TDC Reading Rate Controller has been designed as a training instrument for use with children and adults to increase reading rates, improve reading habits and to develop flexibility of reading rates for various purposes. It has been developed as a result of research and testing and has the approval of recognized reading clinics.

The Reading Rate Controller was developed from an instrument originally designed by Dr. Guy T. Buswell of the University of Chicago, and first reported by him in 1939. Based on the pacing principle, the controller is a simple mechanical instrument for establishing the maximum rate at which a person can read the material placed in the instrument and then read other materials on his own at the same rate. Increases in reading rates ranging from 30 to 300 per cent without comprehension loss have been attained from proper use of the Reading Rate Controller. Three Dimension Co., Dept. CUB, 4555 W. Addison St., Chicago 41. (Key No. 964)

Freezer-Coolers

A new line of 2 temperature, prefabricated, walk-in freezer-coolers has been developed especially for institutional use. The new units are constructed of light weight, heavily insulated aluminum clad sections which are designed to be rapidly assembled even by inexperienced personnel and are available in a number of sizes. The freezer compartments are designed to hold a generous supply of frozen foods and the cooler compartments for storage of meats, vegetables and other foods.

The four models now available range in size from 110 cubic feet of freezer storage and 232 cubic feet of cooler space to 162 cubic feet of freezer storage and 860 cubic feet of cooler space. The coolers can be equipped with heavy duty refrigeration systems to permit sharp freezing of approximately 300 pounds of food per day if desired. Refrigeration Engineering Corp., RECO Products Div., Dept. CUB, 2020 Naudain St., Philadelphia 46, Pa. (Key No. 965)

MagicTape Recorder

The new Crestwood MagicTape Recorder features two new engineering developments, completely new type of recording mechanism and a compact, high



gain amplifier unit. The result is a high fidelity tone, reproducing the full frequency range from 50 to 8000 cycles and capable of recording and reproducing fine gradations of voice, instrument and orchestra in a low priced machine.

Two channel recording is another feature of the new machine which puts a full hour's recording on a standard half hour reel but single channel recordings made on other machines can be played on the Crestwood. Three controls, forward-stop-rewind, record-or-play and tone-and-volume, make operation simple. Reels are threaded into the machine by merely dropping the tape into a slot. Accidental erasing while rewinding tape is prevented by a safety control and rewind time is less than 1½ minutes for a half-hour reel. The machine is compact, weighing only 25 pounds including microphone and extra reel, and is housed in a sturdy, portable case with carrying handle. It is self-contained but output jacks permit playing through a high fidelity radio amplifier, a public address system or auxiliary speakers. Crestwood Recorder Corp., Dept. CUB, 218 S. Wabash Ave., Chicago 4. (Key No. 966)

All-Purpose Washer

The Southern Cross all-purpose washer was designed, after years of research, to provide a low priced, speedy and efficient washer that could be mounted anywhere and that would wash any piece of kitchen equipment or utensil. Powered by a sealed ¼ h.p. ball-bearing motor, the power mechanism, switches and automatic safety devices are enclosed in a stainless steel carrying case. Washing is performed by a series of brushes specially designed for each washing job. The brushes may be rapidly changed and range from special bronze wire Fuller-grips for burned or tarnished pots and

pans, to tough fiber for normal pot washing and nylon bristle brushes for glassware, chinaware and plastic.

The washer is portable, may be wall or ceiling mounted, is instantly detachable and may be placed on any table top. All exposed parts are of stainless steel and all moving parts are permanently sealed. A special attachment that fits any sink washes glassware, cups, bowls and individual tea or coffee pots efficiently in a minimum of time. Southern Cross Mfg. Corp., Dept. CUB, 915 Eye St. N. W., Washington 1, D. C. (Key No. 967)

Putty and Accessories

Caulking putty is now available in cartridge form, each cartridge containing approximately 1/10 gallon, packed 24 cartridges to the carton. A caulking putty in a new tan color has also been developed for use around buildings where exterior materials are of tan, red, brown or other warm color. Caulking putty in the new color is available in cartridge form as well as in cans or drums.

A new caulking gun of sturdy metal construction has been designed to take either cartridges or putty in bulk form. The nozzle and grip assembly are detachable so the barrel can be quickly and easily cleaned and the barrel is 2½ inches in diameter by 9½ inches long. Johns-Manville, Dept. CUB, 22 E. 40th St., New York 16. (Key No. 968)

Cardoplate Self-Writing Record

The new "Cardoplate Self-Writing Record" has been developed to help cut costs and reduce time in record keeping procedures. It embodies the use of a light weight embossed metal plate which can be attached to standard accounting forms, making it possible to add the features of an Addressograph plate to a basic accounting record. Accurate, mechanical processing of data is thus possible, enabling users to transcribe key information about persons, products or services instantly on any business form directly from a posted record at point of use.

A new portable transcribing unit, known as Addressograph Model 125, has been introduced for use in conjunction with the Cardoplate self-writing unit. The small, compact machine can be operated on any convenient stand, desk or table and accommodates forms ranging from 4 inches to 8 11/16 inches wide. It has instantly adjustable gauges for registering margins, special ribbon inking and other specially designed features which simplify the Cardoplate operations. Addressograph-Multigraph Corp., Dept. CUB, 1200 Babbitt Rd., Cleveland 17, Ohio. (Key No. 969)

Reach-In Refrigerator

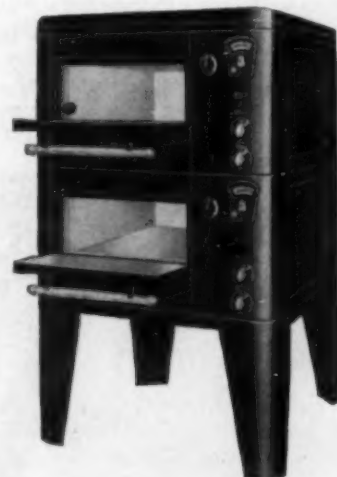
The SC30 is a new 30 cubic foot reach-in refrigerator available with Thermopane glass door fronts and with solid doors. Exterior finish of all models is polished stainless steel with interior finish of stainless steel and aluminum.

The models with Thermopane glass doors afford wide interior visibility. The solid door models have a special vapor-proofing construction to withstand excessive kitchen heat and to operate at minimum cost. All styles are equipped with adjustable shelves and modern streamlined hardware. The all rounded interior corners facilitate cleaning. The refrigeration system is engineered for moist air control with an automatic defrosting coil. Jordon Refrigerator Co., Inc., Dept. CUB, 58th & Grays Ave., Philadelphia 43, Pa. (Key No. 970)

Electric Oven

A new line of electric ovens has been developed by Despatch Oven Company. Sizes of the redesigned models range from No. 338 with 20 by 30 by 9 or 12 inch decks to No. 345 with 57 by 60 by 9 or 12 inch decks. Each size is available with either 1, 2 or 3 decks, each deck consisting of a complete unit.

Features of the new ovens include an indicating control which gives at a glance both the temperature at which the oven is set and the actual temperature of the working chamber; an exhaust damper easily adjusted by a convenient handle on the control panel; control panel with control switch, 3 heat switches for the upper and lower heating element and indicating control adjusting knob; durable construction, and simplicity of design which facilitates baking control and maintenance. Standard finish of the line



is black satin Dulux enamel but other finishes are available if desired. Despatch Oven Co., Dept. CUB, 8th St. at 7th Ave. S. E., Minneapolis 14, Minn. (Key No. 971)

Electric Eraser

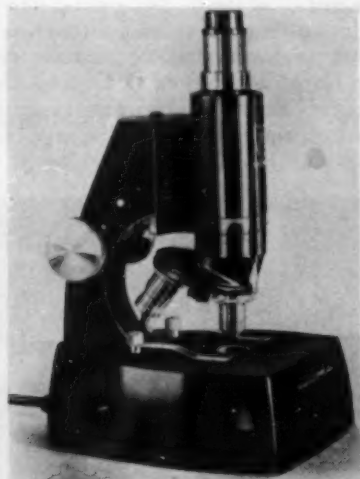
The new Apsco automatic electric eraser is self-starting and stops automatically if too much pressure is applied. The mercury switch automatically starts the eraser when it is picked up and turned over for use and automatically stops when returned to the desk. The new handy shaped case for convenience of use is made of Bakelite, thus remaining cool even when used for long periods. The brushless motor has self-lubricating bearings, thus requiring no servicing. The eraser is quiet and efficient in operation and will erase pencilled, ink or typed work, fine lines or solid blocks. Automatic Pencil Sharpener Co., Dept. CUB, Rockford, Ill. (Key No. 972)

Bottle Vendor

The Model BV-240 is a new, automatic dry bottle Coca-Cola vendor engineered to reduce loading time, minimize service maintenance and provide high bottle capacity. An inclined spiral eliminates bottle scuffing and thus ensures longer bottle life. The vendor has a capacity of 240 bottles and is available with a coin changer. The evaporator with its fan and special baffle causes bottles in the vending position to receive the coldest blast of air, thus making it possible to vend completely chilled Coca-Cola. The vendor is 78 7/8 inches high, 33 1/2 inches wide and 29 1/2 inches deep. Westinghouse Electric Corp., Dept. CUB, 306 Fourth Ave., Pittsburgh 30, Pa. (Key No. 973)

Spencer Scholar's Microscope

The Spencer Scholar's Microscope has been designed specifically for science teaching. Standard Spencer optics are



employed and the factory adjusted illuminator built into the base makes the unit independent of daylight variations. The microscope is lower than comparable instruments, thus permitting comfortable

posture for the average student while looking squarely into the eyepiece.

The microscope is so designed that it may be moved anywhere on the laboratory table without disturbing illumination or other adjustments. The instrument may be lifted by any part without danger of parts separating and all parts may be locked in place to avoid loss or damage. Other features include: low priced, easy to replace bulb; more uniform light source and a wider angle of illumination; single focusing adjustment for critical and rapid adjustment; spring loading of the focusing adjustment which makes it impossible to break slides; focusing control placed low so that forearms rest naturally on the table, and color bands to help identify the power. The thoroughly tested unit is sturdily built with metal bearing surfaces throughout and is available in models with single, double or triple nosepiece and a selection of optics. American Optical Co., Scientific Instrument Div., Dept. CUB, Buffalo 15, N. Y. (Key No. 974)

Disc Voicewriter

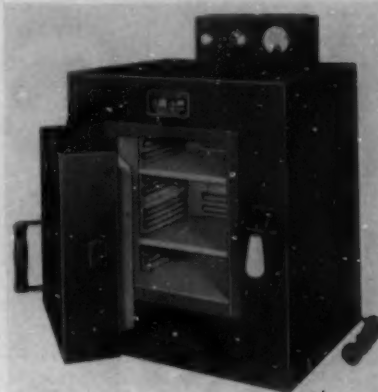
The new Disc Edison Voicewriter is a new dictating instrument combining convenience with the Edison "Ear-Tuned Jewel-Action" diction control. Thirty minutes of dictation can be recorded on each 7 inch vinylite plastic disc which can be mailed if desired. The disc slips into the machine for recording and is automatically positioned. It can be erased by spinning at high temperatures. A special electronic circuit makes the speaker's voice more understandable and a warning light blinks if no disc is in the Voicewriter, if the cover is not down so that the disc is firmly held or if the instrument is not set on dictation. An accurate locating pointer enables the dictator to find his place quickly when desired. Recording parts are completely enclosed to protect them from dust and a small blower draws air from the outside to cool the amplifier tubes. Thomas A. Edison, Inc., Dept. CUB, West Orange, N. J. (Key No. 975)

Coatroom Racks

A new rack unit for handling coats and hats has been developed and announced under the name "The Office Valet-Lockerette." The open type coat rack has space for 12 or 18 separate hat shelf compartments and spaced hangers as well as a shelf for rubbers or shoes. In addition there are provisions for an equal number of lock box compartments for personal effects. The units are space-saving and can be set in single rows or back to back in double rows. Vogel-Peterson Co., Dept. CUB, 624 S. Michigan Ave., Chicago 5. (Key No. 976)

Electric Ceramic Kiln

The new Hotpack electric ceramic kiln is a small, compact unit which should serve effectively in the art department. The interior size is 8 inches wide, 8



inches deep and 11 inches high. Heaters are constructed to allow air circulation between the coils, thus giving long firing service. Three sets of elements deliver an even distribution of heat throughout the chamber and the base of the kiln has special insulation so that it can be used on a table top.

Controls are located on the top panel for convenience, a three heat switch permits low, medium and high heat, a built-in visible indicating pyrometer shows the actual temperature in the kiln and the unit has two removable shelves. The kiln operates by simply plugging into any electric outlet. The Electric Hotpack Co., Inc., Dept. CUB, Philadelphia 35, Pa. (Key No. 977)

Dishwashing Machine

The new model "1-B" Jackson dishwashing machine is designed for operation in limited space. When installed the cover, or top, of the machine is flush with the drain board, thus leaving the drain board free for other purposes and the machine's cover may be used for a work surface when the unit is not in use. Two styles are available; a unit that can be installed in the present drain board or a unit furnished in a standard 24 inch cabinet.

The new space-saving machine has all of the operating features of other Jackson dishwashers including the double-revolving wash spray system. Operation is controlled by a single switch and the machine is designed for small kitchens, soda fountains and other locations where dishwashing equipment is desired in limited space. The base, incorporating both wash and rinse reservoirs, is a solid one piece casting and the dishwashing compartment and cover are of stainless steel. Jackson Dishwasher Co., Dept. CUB, 3703 E. 93rd St., Cleveland 15, Ohio. (Key No. 978)

Lawn Mower

The Badger Jr. is a new, moderately priced power lawn mower designed to cut up to 3 acres of grass per day.



Powered by a gasoline engine, the new mower features simplified clutch and throttle controls, chain drive from clutch to cutting reel and tubular steel handle which can be raised to a vertical position for saving of space in storage. Cutting width is 19 inches and it is easily adjustable to cut grass to any height between $\frac{3}{4}$ and $1\frac{3}{4}$ inches. Coldwell-Philadelphia Lawn Mower Co., Inc., Dept. CUB, Newburgh, N. Y. (Key No. 979)

Insecticide Microsols

The Microsol No. 202 is a compact, portable unit designed to produce a continuous aerosol fog primarily used for dispersion of insecticide concentrates but also for dispersion of germicides, deodorizers, air-refreshers, sterilizing agents and other liquids. The compact unit is powered by a full $1\frac{1}{3}$ h.p. universal motor which is air cooled and which requires no maintenance. An electrically-powered centrifuge breaks down the insecticide material into microscopically fine particles light enough to be airborne and projects them in the form of an aerosol fog which filters into cracks, crevices and inaccessible areas. The unit employs no extraneous materials in forming the fog, can be operated by unskilled personnel and treats an average sized room in 15 seconds. The Microsol No. 202 is manufactured by The Hession Microsol Corp. and is distributed by The Mitchell-White Corp., Dept. CUB, 12 E. 22nd St., New York 10. (Key No. 980)

FM Broadcast Transmitter

The new FM broadcast transmitter, Type BT-11-B, developed by General Electric, is designed especially for schools, universities and other educational institutions. The unit furnishes 10 watts of power output and operates in the 88-108 megacycle frequency range. It meets FCC

regulations for non-commercial educational FM broadcasting with power output of 10 watts or less. It employs 21 electronic tubes and is mounted in a cabinet 43 inches high, 30 inches wide and 18 inches deep. General Electric Transmitter Div., Dept. CUB, Electronics Park, Syracuse, N. Y. (Key No. 981)

Tube Cutter

The maintenance department will be interested in the new tube cutter recently announced with "free wheeling" ball-bearing action which is designed for use with copper, brass, aluminum, Bundy steel, block tin and lead tubing. It will cut all sizes from $\frac{1}{8}$ to 1 inch outside diameter inclusive. A retractable locking reamer for reaming tubing after it is cut is a feature of the cutter which has an overall length of only $4\frac{1}{2}$ inches. The reamer folds out of the way when not in use and the tool weighs only 6 ounces and is known as No. 274-F. The Imperial Brass Mfg. Co., Dept. CUB, 1200 W. Harrison St., Chicago 7. (Key No. 982)

Desk Top Linoleum

Two new patterns of desk top linoleum for office use have been developed to meet the need for surfacing material that has a high light reflectance. The new patterns provide less contrast as a background for paper work, thus reducing eyestrain. The two new patterns are in a Jaspe design; No. 415 Blond Tan, a light tan suited to blond finishes in wood desks, and No. 416 Mist Green, a gray-green designed for use with gray finishes. Both patterns will be shipped with a factory applied lacquer finish. Armstrong Cork Co., Dept. CUB, Lancaster, Pa. (Key No. 983)

Meat Chopper

A new electric meat chopper has been announced at a new low price and featuring quality construction. Streamlined and modern in design, the machine is finished in white porcelain with chrome trim and the base in black porcelain with tinned copper head. Helical cut gears permit silent operation and the chopper is equipped with a feeding tray and a hardwood meat feeder. Several sizes of plate and knife are available for different cuts of meat and for fine or coarse chopping. The chopper is powered by a $\frac{1}{4}$ h.p. motor, 60 cycles, 110 volts, AC, equipped with an overload switch, a built-in toggle switch and an 8 foot electric cord. It is designed and constructed for long, efficient service. General Slicing Machine Co., Inc., Dept. CUB, 100 S. 3rd St., Brooklyn 11, N. Y. (Key No. 984)

Program Timers

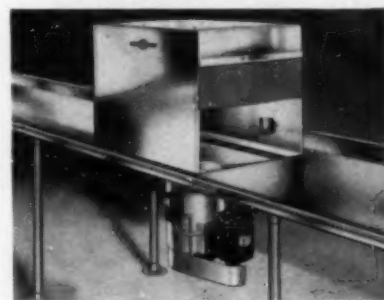
The complete line of Montgomery synchronous program timers is now available in a new silver gray hamerloid baked enamel finish which is designed to be scratch-proof, chip-proof and soil-proof. Dial number and hands are finished in Chinese red for quick, easy reading. All exposed metal parts of the mechanism of the timers are finished in bright chrome plate which is acid and tarnish-proof. The new finishes were developed for improved appearance as well as better service. Montgomery Mfg. Co., Dept. CUB, 549 W. Washington Blvd., Chicago 6. (Key No. 985)

Air Freshener

Air-aid is designed to freshen and deodorize the air quickly and safely. It is described as a fluid that is safe, non-toxic and non-inflammable and is colloiddally dispersed so that it evaporates evenly, removing staleness and odors from the air. It can be applied to any new or existing air conditioning or mechanical ventilation system by means of a simple automatically fed evaporator containing no moving parts. For non-air conditioned spaces containers with individual evaporators are available. Air Correctives, Inc., Dept. CUB, 441 Lexington Ave., New York 17. (Key No. 986)

Pre-Washer for Dishes

The ConDishner is a prewasher through which dishes and silverware pass en route to the dishwasher. It works automatically, the water turning on as the rack of tableware is pushed into the ConDishner and turning off automatically as the rack is removed. Garbage is washed from the dishes, ground into particles fine enough to pass through to the sewer with no handling, and the dishes are rinsed and heated. The trap design prevents loss of silverware that may drop through the rack and no garbage is carried into the dishwasher to clog it. Ta-



bleware comes out of the dishwasher cleaner, with less detergent required. Thermo Cuber Co., Inc., Dept. CUB, 2120 N. Southport Ave., Chicago 14. (Key No. 987)

Lite-Proof Shades

The new Pella Lite-Proof Shades designed especially for the visual education field have a new lock mechanism which makes it possible to install them on almost every type of classroom or auditorium window. The shades operate on the same principle as Pella RolSCREENS and are permanently installed. The shade roller is contained and totally concealed in a neat steel housing at the top of the window frame. When needed, the shade is pulled down and automatically enters metal guides at each side of the window, thus sealing light out. A positive lock at the bottom of the window holds the shade tightly, eliminating bulges and open areas around the frame.

The shade is easily and quickly drawn for darkening and as readily returned to the inconspicuous case at the top of the window when not in use. The new shade cloth is a tough, plastic-coated material which withstands hard use without cracking or becoming brittle. It is completely opaque. RolSCREEN Company, Dept. CUB, Pella, Iowa. (Key No. 988)

Radareed Organ

The Radareed Organ is described as an electronic-pipe organ, "the electrical descendant of the original wind instrument." The Radareed uses the rich, natural tone of the wind activated reed and is played like a pipe organ. The reed itself is not part of the electronic circuit, only the tone of the reed is altered to produce all of the traditional pipe organ voices.

The new organ has no mechanisms or gears and is simple in structure, design and operation. It can be obtained with one, two, three or four manuals and pedals. The Radareed Corp., Dept. CUB, 3800 Dempster St., Skokie, Ill. (Key No. 989)

Knight Wire Recorder

The Knight is a new low-priced combination wire recorder and phonograph



designed as a teaching aid, for recording important activities and to record lectures for playback in discussion groups. In addition to recording and playing back on wire, the new unit plays any 78 r.p.m.

10 inch or 12 inch phonograph record and serves as a complete public address system or wireless phono oscillator. The unit is built for easy operation and is housed in an attractive carrying case. Allied Radio Corp., Dept. CUB, 833 W. Jackson Blvd., Chicago 7. (Key No. 990)

Soda Fountain

A new soda fountain, known as the Soda-Pak, has been developed for quick installation in a minimum of space. The new fountain is moved onto the floor in a single unit and is ready for operation after connection with water, waste and refrigeration outlets. It is available in four models, all with attractive counter designs, and is a complete fountain unit. The Fischman Co., Dept. CUB, 10th and Allegheny, Philadelphia 34, Pa. (Key No. 991)

Plastic Upholstery

Boltaflex is an all-plastic upholstered material which is designed to withstand rough usage, not to crack, peel or craze in any temperature, to be waterproof, resistant to stains, food and alcohol, and is easily cleaned. It does not support combustion and can be draped, welted or channeled. It is now available in tufted form as Sealtuft Boltaflex, developed by a new process which heat-fuses the standard Boltaflex material to a layer of fire-proofed cotton and a sheet of thin film plastic. It is available in a wide variety of colorfast, attractive colors designed to blend with any decorating plan. Bolta Products Sales, Inc., Dept. CUB, Lawrence, Mass. (Key No. 992)

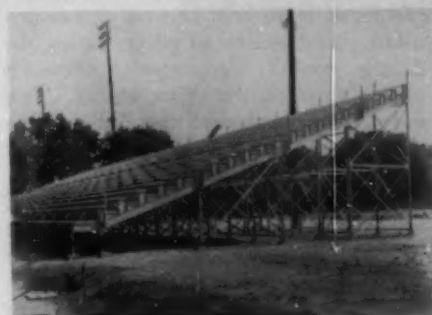
Recording "Chip-Chaser"

A new device has been developed to prevent a recording "chip" or thread from getting tangled under the recording stylus. Known as the Chip-Chaser, the device consists of a light weight, aluminum-backed strip of felt which is attached to and supported by a heavy cast-iron base. Placed beside the recording turntable with the felt strip laid across the recording disc, the device automatically guides the chip from the cutting stylus to the center of the disc where it winds around the center pin. The felt strip can be tilted out of the way when not in use.

The Chip-Chaser is self-aligning, requires no installation expense, and is so designed that it cannot scratch or damage the surface of the recording disc. It is available in two sizes, for use with turntables up to 12 inches in diameter and for 16 inch turntables. Audio Devices, Inc., Dept. CUB, 444 Madison Ave., New York 22. (Key No. 993)

Sectional Steel Bleachers

Low cost grandstand construction is offered through use of the factory built steel bleachers designed for erection at the school or college by student volun-



teers or maintenance men. Consisting of a framework of stringers and walkway seat brackets made of steel Junior Beams, light weight hot rolled steel beams which can be handled manually, the bleachers are designed for rapid, safe construction.

Seats and walkways are of wood with handrails of pipe, steel or wood as desired. The bleachers can be joined to existing stands and on stands more than 10 rows high, provision can be made under the stands for locker rooms and other areas. The steel Junior Beams are designed to hold the load safely and to produce permanent bleachers. Kerrigan Iron Works, Inc., Dept. CUB, Nashville 8, Tenn. (Key No. 994)

Paint Brushes

Two new lines of paint brushes announced by Devco & Raynolds will be of interest to the business manager and the maintenance chief. The result of research and experimentation, the new brushes were developed to conform to specifications obtained from hundreds of actual users. Lighter-weight construction, functionally shaped handles and non-marking bristles are some of the improvements offered in the Black Prince and Forty-Niner lines. The former is a feather-weight wall brush in sizes 3½ and 4 inch and the latter is a wall brush and flat varnish brush available in seven sizes ranging from 1 to 3 inches. Devco & Raynolds Co., Inc., Superkleen Brush Div., Dept. CUB, 44th St. & 1st Ave., New York 17. (Key No. 995)

Floor Patch

Tampatch is a new fast drying floor patch designed for making rapid repairs to concrete floors without the necessity of closing off the area being treated. The product is supplied in ready mixed form, ready for use, and is designed for interior or exterior use. United Laboratories, Inc., Dept. CUB, 16801 Euclid Ave., Cleveland 12, Ohio. (Key No. 996)

Syracuse China Patterns

Four new patterns have been announced in Syracuse China for institutional food service. The new china has large patterns, scaled to modern fabrics and floor coverings. Colors are monochromatic or in bold contrasts, thus permitting a diversity of effects when the dining room's decorative scheme is planned around the china service. This is in line with modern thought in planning dining rooms in the dormitory or union building.

The Whitfield, Montrose and Colonial patterns have flower themes while the Graymere pattern is edged in gray with a black and white design producing an effective result. The new designs help to make food service more attractive and inviting and the fine Syracuse China is of traditional quality and serviceability. **Onondaga Pottery Co., Dept. CUB, Syracuse, N. Y. (Key No. 997)**

RaisinOats

A new cereal product has been introduced under the name 3-Minute Raisin-Oats. It is designed to combine the protein, vitamin B₁, iron and food energy of oatmeal with the vitamin, carbohydrate and mineral qualities of raisins as a breakfast cereal and for use in muffins, oatmeal bread and other baked products.

In addition to the nutritive qualities of the combined foods, RaisinOats offers the advantage of the flavor combination and should prove to be a welcome change for breakfast. RaisinOats is so prepared that it cooks in three minutes for use as a cereal, thus making it convenient for special preparation as well as for a general breakfast cereal. **National Oats Co., Dept. CUB, Cedar Rapids, Iowa. (Key No. 998)**

Lawn Mowers

Moto-Mower has announced two new power lawn mowers with wide rubber tread traction wheels mounted rearward and within their cutting width. The "LawnMaster" is a 30 inch model and the "LawnPeer" a 24 inch model, both designed to turn in a short radius for easy maneuverability. The over-all width of the 24 inch mower is 27 inches and that of the 30 inch mower is 33 inches. Both mowers have automotive type enclosed beveled gear differential and the entire axle assembly of wheels and differential can be easily and quickly removed from the side frame.

Each mower has a 6 inch reel with 5 heat-treated alloy steel blades mounted on self-adjusting Timken tapered roller bearings. The entire reel assembly is designed for easy removal for sharpening. Cutting height is 1/2 to 2 inches and a

separate reel clutch with safety device is supplied for engaging and disengaging reel. **The Moto-Mower Co., Dept. CUB, 4600 Woodward Ave., Detroit 1, Mich. (Key No. 999)**

Latex Pillow

A new Restfoam pillow, made entirely of latex foam, has recently been announced. The new pillow combines the resiliency of latex foam with the buoyancy of air, thus giving natural support to the head. It keeps its shape, is light and cool and non-allergenic. **Hewitt Restfoam Div., Hewitt-Robins, Inc., Dept. CUB, Buffalo 5, N. Y. (Key No. 1)**

Floor Machine

The new model C-18 floor machine recently announced by The Kent Company has a brush spread of 18 1/2 inches and is equipped with a 3/4 h.p. motor. The offset motor design counter-balances the handle, thus evenly distributing the weight of the machine and facilitating its operation. All moving parts are mounted



on ball or Timken Roller Bearings, the motor is dustproof and waterproof and the two gears run in a continuous bath of grease. The adjustable handle is equipped with a safety switch which can be operated by either or both hands. In addition, the C-18 has all of the fine features of earlier Kent models. **The Kent Company, Inc., Dept. CUB, Rome, N. Y. (Key No. 2)**

Drain Interceptor

Fragments of solids present in waste water can be collected before entering drain lines through the new solids interceptor recently announced. Two perforated metal strainers intercept the solids in the waste water as it passes through the interceptor body, the first strainer collecting the larger fragments and the second completing the interception of all solids. Solids drop to the bottom of the sediment container and the water is directed upward to the outlet. The impervious, non-metallic cover is easily removed by unlocking a cover clamp and the sediment container is readily lifted out for cleaning. **J. A. Zurn Mfg. Co., Dept. CUB, Erie, Pa. (Key No. 3)**

Product Literature

- "Portion Control and Food Cost Manual," by George L. Wenzel, food expert, is a 52 page booklet published under the sponsorship of the Paper Cup and Container Institute, Inc., 1790 Broadway, New York 19. Designed to effect savings in food service, the booklet contains tables of suggested portion sizes and costs for various food items. Single copies are available to food service managers at no cost although the manual carries a price of \$1. **(Key No. 4)**

- The 1949 edition of the "Blue Book of Uniforms" has been released by Angelica Jacket Co., 1419 Olive St., St. Louis 3, Mo. The 64 page catalog gives complete information on the full line of washable uniforms manufactured by the company and introduces the new "Velva-Glo" nylon in pastels, white and black and the new "Aire-Lite" cloth, a high tensile strength fabric which is light in weight. New accessories and colors are included and many of the more than 235 uniforms illustrated are in full color. **(Key No. 5)**

- Illustrations showing each step to be taken for the proper care of various types of floors, and supplemented with written explanations, are features of a new booklet, "How to Care for Your Floors," issued by S. C. Johnson & Son, Inc., Racine, Wis. The 20 page guide covers care of rubber, asphalt tile, wood, cork, linoleum, concrete, terrazzo and gym floors. Practical hints for cutting maintenance costs, suggestions for a daily maintenance plan and complete catalog information on Johnson products are all included in the booklet. **(Key No. 6)**

- Full information on the line of classroom furniture and equipment as well as office furniture, chairs, tables, desks and kindergarten furniture handled by the Franklin-Lee Co., 215 W. 68th St., Chicago 21, is given in the new Special School Bulletin No. 55 recently released by the company. **(Key No. 7)**

- Supplement A, Catalog No. LP28 gives information on new items as well as the regular line of "Laboratory Glassware" in Pyrex brand, Vycor brand and Corning brand, and is issued by the Laboratory and Pharmaceutical Sales Dept., Corning Glass Works, Corning, N.Y. **(Key No. 8)**

- The complete line of Onan Electric Plants, including many new models, is covered in a new 20 page, 2 color catalog issued by D. W. Onan & Sons Inc., Minneapolis 5, Minn. A model guide, written in easy-to-read style, is included in the booklet to assist in the selection of the right plants for every need. **(Key No. 9)**

• The interesting story of the hypothetical "Mr. Higby" and his problem of floor safety and floor care is told in a revised edition of the booklet, "Mr. Higby Learned About Floor Safety the Hard Way." Prepared by the Walter G. Legge Co., Inc., 101 Park Ave., New York 17, the booklet tells the story of floors that need polishing through "Mr. Higby's" experiences after slipping on the floors in his offices. Why floors need waxing, what makes them slippery and how they can be polished and still be safe are some of the problems covered in conversational style in this helpful booklet. (Key No. 10)

• "Weather Instruments and Teaching Aids" are illustrated and described in a catalog recently issued by Science Associates, 401 N. Broad St., Philadelphia 8, Pa. Specific recommendations are made in the booklet for complete weather stations suitable for a primary school, a secondary school and a college. (Key No. 11)

• "Stainless Steel Dishes for Schools and Colleges" is the title of a folder issued by American Permanent Ware Co., 729 Third Ave., Dallas 10, Tex. Illustrations show the various plates, bowls, cup and tray available in this material described as "inherently sanitary, virtually everlasting and always shining bright." The leaflet stresses the convenience, economy

and attractiveness of stainless steel dishes for use in institutional cafeterias and lunchrooms. (Key No. 12)

Suppliers' Plant News

Bell & Howell, 7100 McCormick Rd., Chicago 45, manufacturer of motion picture equipment, announces purchase of the Krypter Corporation, Mt. Read Blvd., Rochester, N. Y., manufacturer of microfilm. Facilities of the Mt. Read plant will be used as an additional source of microfilm for Bell & Howell's microfilm equipment. All such film will be sold by Burroughs Adding Machine Co., Detroit, Mich., recently appointed by Bell & Howell as exclusive world-wide distributors of its entire line of microfilm equipment. (Key No. 13)

Fedders-Quigan Corporation, Buffalo 7, N.Y., is now marketing its water cooler products under the brand name "Fedders." The company now has in production 9 different models of electric water coolers, in both hermetic and open models of bottle and pressure-bubbler types, which will be marketed and serviced through the company's regular distribution channels. (Key No. 14)

The Formica Company, 4614 Spring Grove Ave., Cincinnati 32, Ohio, manufacturer of Formica decorative plastic laminates, announces adoption by the

company of the new "NEMA Standards for Laminated Thermosetting Decorative Sheets" published by the National Electrical Manufacturers Assn. The standards cover grades, thickness, color, finish, color fastness, dimensional stability and flexural strength, in addition to resistance to wear, boiling water, high temperature, stains and moisture. (Key No. 15)

National Paper Products, 122 E. 42nd St., New York 17, manufacturer of paper products, announces change of name to **Nata Products Co., Division of Crown Zellerbach Corp.** (Key No. 16)

The Reynolds Electric Company, 2650 W. Congress St., Chicago 12, announces removal to a modern factory building at **3000 River Rd., River Grove, Ill.**, for the manufacture of its line of commercial kitchen equipment and air circulators. (Key No. 17)

The Toledo Scale Company, Toledo 12, Ohio, announces purchase of the Sterling Division of the Anstice Company, Inc., Rochester, N. Y. The manufacture of Sterling kitchen equipment: dishwashers, potato peelers, vegetable dicers and silverware burnishing machines, will be continued at Rochester, N. Y. as the **Sterling Division of the Toledo Scale Co.** (Key No. 18)

WANT ADVERTISEMENTS

The rates for want advertisements are: 10 cents a word; minimum charge, \$2.50.

Address replies to **COLLEGE AND UNIVERSITY BUSINESS, 919 N. Michigan Avenue, Chicago 11, Ill.**

POSITIONS WANTED

College Business Manager or Assistant—Age 36, B.A. Degree; currently serving in junior college as bursar and bookstore manager, plus some purchasing, Veterans Affairs and general administrative work; also, instructor in mathematics of accounting. Write Box CW 53, **COLLEGE AND UNIVERSITY BUSINESS.**

POSITIONS OPEN

Campus Gardener—For a large southeastern university; must be capable of planting, pruning, fertilizing, and treating diseased plants, grass, trees, etc., and be able to handle campus workmen; need a person capable of maintaining and improving plants and trees on this large campus. Interested applicants write direct to **J. S. Bennett, Director of Operations, University of North Carolina, Chapel Hill, North Carolina.**

PLACEMENT BUREAUS

Placement and Vocational Service for University and College men and women. Home Economics graduates and Dietitians. We offer a personal employment service, of the highest ethical standards, to meet the individual requirements of Employees and Employers. Inquiries by mail given prompt attention. **WINSHIP PERSONNEL SERVICE, 127 North Dearborn Street, Chicago 2, Illinois.**

Women in Food Service: Salaries \$2500-\$6500 For professor to head Dept. of Institution Management; For associate professor to teach large quantity cookery; For food production managers and assistants in industrial cafeterias; In department store tea rooms; In college dormitories; As traveling supervisor for hotel chain. **SATHER PLACEMENT SERVICE, Mary E. Sather, Director, Dept. C, 136 N. 12th Street, Lincoln, Nebraska.**

LOOKING FOR SOMEONE?

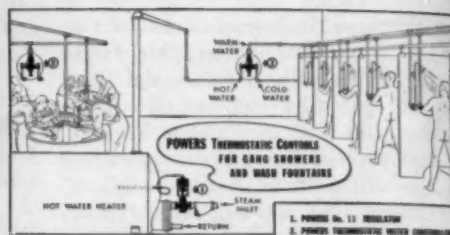
Someone to fill a vacancy in your staff—a Business Manager—Superintendent of Buildings and Grounds—Purchasing Agent—Director of Food Service and Dormitories?

Or maybe you are thinking about making a change.

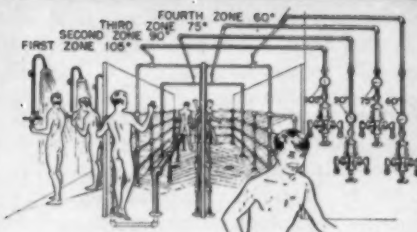
If so, consider placing a "Want Advertisement" in the next issue of **College and University Business.**



**CAN'T BEAT
POWERS
REGULATED
SHOWERS**



OTHER TYPES OF POWERS SHOWER CONTROLS



Zone Showers for Swimming Pool

Bathers can really relax and enjoy a Powers regulated shower. No danger of scalding. No unexpected temperature changes.



6" diam. dial.



Only One Moving Part

POWERS

Type H

***Thermostatic* SHOWER MIXERS**

are **SAFE** against scalding caused by

1 PRESSURE or 2 TEMPERATURE

fluctuations in water supply lines

Safer—because of their quick acting response to any change in temperature setting, pressure or temperature variations in water supply lines. Users report control within $\frac{1}{2}^{\circ}\text{F}$. **Greater Comfort**—shower temperature remains constant wherever set. No jumpy temperatures. **More Economical**—POWERS thermostatic mixers promptly deliver showers at the right temperature...no waste of time, hot or cold water.

For new installations or when modernizing obsolete showers... play safe, use Powers type H thermostatic shower mixers. May we send Circular H-48? **CHICAGO 14, ILL.**, 2706 Greenview Ave. • **NEW YORK 17, N. Y.**, 231 E. 46th St. **LOS ANGELES 5, CAL.**, 1805 W. Eighth St. • **TORONTO, ONT.**, 195 Spadina Ave.

THE POWERS REGULATOR CO.

OFFICES IN 50 CITIES • SEE YOUR PHONE BOOK

Over 55 Years of Water Temperature Control

49HM

Happy 26th Birthday



TO FIRST ALL-ELECTRIC COLLEGE KITCHEN

AND FOR FONTBONNE COLLEGE, IN ST. LOUIS, IT'S REALLY A HAPPY BIRTHDAY!

This spic and span Hotpoint Kitchen has been giving trouble-free, efficient service DAY IN and DAY OUT for 26 long years.

Here Again is Dramatic Evidence of the Extraordinary Long Life and Dependability that Are Inherent Qualities of All-Electric Cooking with Hotpoint!

And here, too, is proof that Hotpoint All-Electric Cooking costs far less to own. Think of it! Depreciation for this first all-electric college kitchen has been less than 4% per year—and even now, Fontbonne's Hotpoint Kitchen gives no indication of a need for early replacement. Contrast this amazing Hotpoint performance with other types of equipment, where depreciation may be as high as 15%!

26 YEARS IS A LONG TIME

A record of 26 years' service for any kitchen means a great deal. Obviously, Fontbonne College takes good care of its equipment, but dependability such as this requires more than special care—it requires the built-in stamina that is inherent in every Hotpoint product—plus the exclusive advantages of electric cooking that are continuing to contribute to this very significant record of peak performance.

WHY DID FONTBONNE COLLEGE CHOOSE ALL-ELECTRIC COOKING WITH HOTPOINT?

To answer this, one must hark back to the progressive concepts of this great institution. Even 26 years ago, a studied appraisal of quantity cooking requirements and types of equipment available pointed to the vast superiorities of All-Electric and Hotpoint.

Here was found the promise of important savings in both capital investment and daily operating costs. On this sound premise Fontbonne

Fontbonne College, St. Louis, Mo.
Hotpoint 1923 installation.

College made its decision—and on 26 years of dependable performance this decision has been confirmed.

It is little wonder, then, that when additional facilities were needed, Hotpoint was selected for a second all-electric kitchen, which was installed in 1940.

TRY TO PERSUADE A HOTPOINT USER TO SWITCH

Here is the most valid of all testimonials—the user. And Hotpoint users are legion in their enthusiastic loyalty. You just couldn't get them to switch back, once having experienced the advantages of electric cooking with Hotpoint.

These same users strongly recommend that you, too, learn the facts about better cooking at lower cost with Hotpoint All-Electric. Your Hotpoint man will be happy to give you this information, as well as case histories of Hotpoint in action at other institutions. There is no cost—no obligation.

MAIL COUPON FOR QUICK REPLY



CONFIRM THESE FACTS!

USERS WILL TELL YOU THIS ABOUT ALL-ELECTRIC COOKING WITH MODERN HOTPOINT EQUIPMENT

Cuts Fuel Costs—Less heat absorbed, fast hot completion, uniformly better results.

Cuts Labor Costs—Cooks same number of meals with less help, in less time, and with less effort.

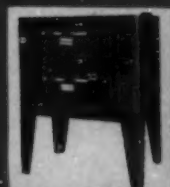
Cuts Maintenance Costs—Retains important savings in cleaning and reconditioning because there are no products of combustion.

SAFE—No flame, no escaping fumes, no explosion hazard.

Only Lower—the record of users' service is an eloquent answer.



Hotpoint Electric Range—Caloric burner, one heating coil, push-in the perfect temperature control that is necessary to cook in.



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ALL ELECTRIC COOKING

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HOTPOINT INC., A General Electric Affiliate
COMMERCIAL ELECTRIC COOKING EQUIPMENT



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HOTPOINT INC., Commercial Cooking Equipment Dept.
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*Report of independent nation-wide survey
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